New Brunswick
School Research Consortium

RESEARCH REPORTS

TEACHER EDUCATION - A REVIEW OF THE LITERATURE
1990 - 1989

NEW BRUNSWICK TEACHERS' ATTITUDES TOWARD INTEGRATION

MAY, 1990

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By: A.T. Pope

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By: P. Cincurak

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PREFACE

The New Brunswick School Research Consortium is pleased to publish the two reports contained herein. These reports involve an examination of the literature related to teacher education for the period 1980 - 1989, and an examination of the attitudes of New Brunswick teachers towards integration. Both reports should help professionals and administrators with the conduct of schooling.

The ongoing cooperation between cooperating school districts, the New Brunswick Teachers' Association, the Provincial Department of Education, and the University of New Brunswick provide a unique opportunity for the delivery of school based research. It is hoped that the Consortium will continue to be useful for professionals.

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TEACHER EDUCATION
A REVIEW OF THE LITERATURE
1980 - 1989

A REPORT COMPILED FOR THE
NEW BRUNSWICK SCHOOL RESEARCH CONSORTIUM

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PREFACE

The literature of teacher education is vast. Citations to more than 5,700 periodical articles and reports from the 1980's can be retrieved from the ERIC database by using the descriptor "teacher education." A thorough review of the literature in English, including monographs and dissertations, would require the examination of at least 7,000 documents. The present compilation includes all these formats but falls well short of completeness.

Earlier reviewers also opted for selectivity instead of completeness. Houston and Newman (1982), Lanier and Little (1986), and Wragg (1982) compiled general, though far from complete, reviews of scholarly work in teacher education. Relatively little overlap occurs among the publications cited in these reviews. Some of this individuality may have resulted from the usual problems of document availability, and some may have resulted from having cited similar but not identical articles. Redundancy is as prevalent in the literature of teacher education as in any other field. Most of the uniqueness must, however, have stemmed from the distinctive perspective from which each reviewer began the task. In a field as pervasive, contentious, and value-laden as teacher education, some initial viewpoint is both inevitable and necessary. The perspective adopted in this review is entirely that of the compiler, and any deficiencies in it or in the compilation itself should be attributed to him, rather than to the New Brunswick School Research Consortium.

The issue of selectivity versus completeness can also be examined as a cost-benefit problem. The benefits of a complete review on teacher education would probably not approach the cost of such an undertaking. The depth of this literature does not match its extent. In assessing teacher education research in Canada, Holborn and Wideen (1983) concluded that:

> What appears to occur is that individuals (faculty and students) pursue curiosities here and there with little or no reference to work conducted elsewhere in Canada. In short, research into teacher education has no tradition in which a community of scholars share a common interest. (p. 32)

This failure to build a coherent literature was judged only the first of several levels of problems with research in teacher education. Holborn and Wideen also criticized the restricted methodologies followed in this research and the researchers' general failure to ask the right questions. The focus, they suggested, should be on research into three areas: "the academic, social and political context of teacher education, and the purpose and goals for the training of teachers, and the effectiveness of program elements" (p. 36).

There are other aspects of teacher education that merit attention, but this is a useful division of the subject. The consequences of teacher education probably hold the ultimate interest. To consider how well a program is functioning is a meaningless exercise without some previous consideration of the purpose of that program. Furthermore, program goals do not arise in isolation. They often make sense only in relation to a particular environment. Hence, this review will begin with an examination of what is known about the context in which teacher education occurs.

First, however, two qualifications that pertain to this compilation need explication. The authors of the publications reviewed here reached their respective conclusions by means of many different sorts of arguments, some more soundly formulated than others. While limitations affecting these arguments are noted in some instances, this compilation aims to be a summary of the literature, rather than a methodological critique. Whether further generalization of any of the conclusions is warranted is an open question. The second constraint refers to the inexorable numerical dominance of publications from the United States. When the provenance of a report is not stated, it should be assumed to be the United States.

THE CONTEXT OF TEACHER EDUCATION

1. Academic Milieu

Teacher education is now almost exclusively associated with universities, but the relation between the task and context is an uneasy one. The basic element of this incongruity has been well known at least since Conant (1963) described the situation he observed. Arts and science faculty generally denigrate both the process of teacher education and those responsible for it. As many subsequent observers have noted, this pervasive attitude has tangible consequences. A faculty of education typically receives a disproportionately small share of the resources available within a university.

Schwebel (1985) analyzed the institutional origins behind these observations. He attributed the arts and science perspective that teacher education is alien to the culture of the university to three factors: the separate historical development of the university and teacher education programs, the difficulty of being a productive scholar while fulfilling the responsibilities expected of an education faculty member, and the low social status associated with the public schools and those who make their careers in them.

In making his first point, Schwebel observed that when teacher education became an explicit university responsibility, universities already had 700 years of development in the arts and science fields. Those who came into this environment to teach teachers were, in Schwebel's terms, "distinctly different in background, training, and intellectual orientation from their counterparts in the rest of the university" (p. 3). Rather than following academic tradition and placing their loyalty with their discipline, teacher educators further alienated themselves from their arts and science colleagues by remaining loyal to the public school system, the teachers' professional associations, and the teacher certification authorities.

After acknowledging that the production of knowledge has become the primary function of the university, Schwebel turned his attention to how well teacher education faculty members have done in producing knowledge. He found the results debatable. His less than sanguine conclusion was that an improvement in the perception or the reality regarding educational research probably would not lift the status of faculties of education substantially.

Schwebel conjectured that teacher education's low status in the university resulted from the fact that, unlike the traditional and highly-esteemed pure and applied disciplines, teacher education offered very little to the nation's industrial, commercial and political leaders. Leadership, he asserted, "reproduces itself without much reliance on the public school system" (p. 6). The converse, teacher education's emphasis on the needs and problems of children at the lower end of the social scale, he saw as reinforcement of the discipline's low academic status. The critical theorists, cited by Ginsburg (1988), promulgated a more extreme view. They argued that both teacher education and schools reproduce all the inequalities of society.

Ducharme (1985), in covering some of the same ground as Schwebel, placed greater emphasis on "the fiscal nightmare of teacher education" (p. 8). Warren (1985) suggested that dissatisfaction with teacher education did not begin with its amalgamation into the universities. Instead, he asserted that during the past two hundred years, "teacher education has seemed to be in perpetual disfavour" (p. 11). However, he added three points that supplement the institutional analysis of teacher education's status. First, he rejected comparisons with other professional faculties as almost meaningless because "market conditions have driven both the policies and the curricula in teacher education, as both have responded to shortages and surpluses of teachers" (p. 10). Next, he suggested that the negative attitudes have not been exclusively associated with the arts and science faculty. When teacher education was conducted in normal schools as single purpose institutions, the normal school faculty complained about students who attended with the intention only of getting a general education. Finally, he stated his belief that teacher educators have interpreted their own role narrowly and have not tried to educate teachers to "conceptualize, innovate and analyze" (p. 11).

Sykes (1983) described the conflict between teacher education's latent and manifest roles within the university. He noted that while funding formulas usually increase the revenue available to public universities as enrolment increases, the internal distribution of funds rewards "every professional school and department but teacher education" (p. 90). He saw teacher education's latent role as the subsidization of other programs and teacher education's search for higher academic status, which required the closing of the normal schools and the transfer of their function to the universities, as having reached an ironic conclusion. This latent role may be related to the proliferation of teacher education programs with small enrolments and inadequate curricula noted by Barrow (1987) in his survey of elementary science teacher education in New England.

Tucker (1986) made two additional observations regarding teacher education's status within the university. He criticized faculty in other academic departments for avoiding the public schools as an object of research and for failing to devote any resources to a systematic improvement of their own teaching.

Shulman (1986) presented a contrasting view of the evolution of the university. He suggested that the medieval universities were in fact devoted to the training of teachers. What they lacked was not the role or responsibility. They simply did not acknowledge the sharp distinction between content and teaching method that has pervaded the recent history of teacher education.

Clifford and Guthrie (1988) compiled the most extensive analysis of the conflict between teacher education and the university establishment. Focusing on ten of the most prestigious graduate programs in education in the United States, they produced an historical and sociological study of the development and dismantling of these programs. The common theme in the analysis is the elimination from these program of any role in the actual education of teachers. In almost every instance the pervasive milieu overwhelmed the fine intentions expressed by those who established these programs.

Clifford and Guthrie used the decline of the University of Chicago's graduate program in reading to illustrate how dramatic the change could be when the academic ethos finally established its precedence over the task of teacher education. During the decades when William Gray administered this program, the University of Chicago was "at or near the pinnacle of the nation's programs for the preparation of researchers, teacher educators, textbook writers and curriculum specialists in the field of reading" (p. 251). The strong ties to the profession as well as to research about reading were broken within a decade of his death. His closest colleagues retired or relocated. The final and most symbolic element in this devolution occurred when the William S. Gray Chair was awarded to "a cognitive psychologist with no standing in the reading field" (p. 253).

The transfer of teacher education from normal schools to the universities happened more recently in Canada than in the United States, but the timing does not seem to have affected the consequences. Wideen and Hopkins (1983) asserted, "Many Faculties of Education compete poorly within the educational community both for respect and resources and in some cases retain most aspects of the normal school" (p. 3).

Starting from much the same factual base as in the United States, the literature about teacher education's place in Canadian universities has been more clearly oriented toward change. Hopkins (1982) analyzed the reasons that the transition from a normal school setting had not produced substantive changes in Canadian teacher education. He categorized an extensive list of real and perceived barriers to change as systematic, organizational or individual.

Hopkins, Wideen and Fullan (1984) addressed the issue of how to overcome this resistance to change. They surveyed the education faculty in 10 Canadian universities using an instrument that measured organizational functioning. Three methods were used to communicate the findings to the participants. The objective was to use information about the perceived functioning of the organizations to change their actual functioning. The subsequent evaluation of this organizational development intervention showed that climate preparation, feedback and follow-through were all necessary for the intervention to succeed.

Wideen and Holborn (1986) acknowledged that changes had occurred in Canadian faculties of education and attempted to account for this fact. They identified six factors as necessary conditions for such change. They suggested that the external environment must provide some pressure for change, and those in a position within the institution to exercise power in favor of the change must also do so. Shelter conditions, which provide some protection from hostile criticism, and the organizational ability to accommodate change were designated as further prerequisites for change.

Finding suitable leaders and receptive followers were listed as the final requirements.

2. The Political Environment

While other university-based professional programs function primarily in an academic environment that is supportive more often than not, the exertions of teacher educators are subject to both the negative aspects of academic politics and the exigencies of the wider political sphere. The size of the teaching profession; its place in the public domain; the direct acquaintance everyone has with the school system; and the many perceptions that exist regarding the nature, causes and consequences of problems in the schools, all combine to insure that teacher education is the object of frequent, but not necessarily productive, political scrutiny.

The many reports that have been published, particularly in the United States, concerning schools, teaching and teacher education evince the political strength these issues have. Two reports in particular, Tomorrow's Teachers by the Holmes Group (1986) and A National Prepared by the Carnegie Forum on Education and the Economy (1986), have been the object of sufficient comment, analysis, and criticism to warrant a literature review of their own. The recommendation that teacher education become a graduate program and that the undergraduate degree in education be abolished, a prominent element in both reports, engendered a great deal of debate.

The interchange between Gifford (1986) and King (1986) brought out many of the salient issues. Gifford, a participant in both reform groups, rejected the undergraduate education major because it is predicted on insufficient time, attracts students with too little talent, rejects more talented students who subsequently become interested in teaching, relieves arts and science faculties of their responsibilities to future teachers and perpetuates the rift between content and pedagogy. King, as defender of the existing programs, did not counter Gifford's claims. Instead, he argued that the reform proposals will not succeed because they are too negative regarding the existing teacher education programs and the current members of the teaching profession. In addition, he noted that there are more promising approaches toward improving teachers' skills and attitudes, such as lowering certain class sizes; improving the academic milieu of teacher education; enhancing the image of the public schools; and providing accessible, low cost, high quality inservice education.

Denemark and Nutter (1984) reviewed the range of responsibilities that have been politically imposed on teachers or fallen to the school system by default. They argued that a six year teacher education program would provide the time to prepare individuals to meet these responsibilities.

Roth (1983) reviewed fifteen post-1976 reports and proposals for the reform of teacher education and concluded that "although we are witnessing a new wave of reform in teacher education there have been many waves before with no result" (p. 24). Ryan (1989) commented even more sceptically on the reform reports and the political context from which they arose. Murray (1986) combined his analysis of the proposals for reformulating teacher education with a design for a reconstructed teaching profession analogous to the medical profession.

Shor (1986) placed the teacher education reform movement in an economic context. In an extensive review of several reports, he criticized the various proposals as examples of blaming the victim. He attributed deficiencies in the school system to inadequate funding, rather than to inadequately prepared teachers.

Cornbleth (1986) discussed the ritual aspects of teacher education reform movements. As part of her analysis she noted five unresolved contradictions in the reform proposals. In her view, the proposals failed to define the purpose of teacher education, yet presumed a consensus regarding that purpose. They then aimed for the contradictory goals of quality and expansion, diversity and centralization, scientific excellence and technical standardization, and social craftsmanship and technical management.

Tyler (1985) urged current reformers to examine two earlier reform efforts, Charters and Waples (1929) and Bigelow (1946). He noted several similarities between current concerns and the concerns that led to these reports, and he expressed the belief that teacher education still has not learned the lessons regarding the integration of theory and practice illustrated in these reports.

The Canadian literature on teacher education reform has been written in a much more subdued tone than that emanating from the United States, but there is a certain similarity in the conclusions. The five year teacher education program, consisting of an undergraduate degree in arts or science followed by a one year Bachelor of Education program, while far from universal, has a long tradition in Canada. A Legacy for Learners, the report of the British Columbia Royal Commission on Education (1988) recommended that all prospective teachers in that province follow a five year university program. The Final Report of the Teacher Education Review Sharing Committee, produced by the Ontario Ministry of Education (1988), recommended that teacher education in that province be lengthened by one year. Building on the report by Fullan and Connelly (1987), the Committee proposed to follow the one year Bachelor of Education program with a second one year phase of guided introduction to teaching. This would occur at the place of employment, but there would be ties back to the faculties of education. McConaghy (1989) summarized the Ontario situation.

Alberta's Initiation to Teaching Project was funded for two years and attempted to facilitate the transition from teacher education student to professional teacher for up to 900 prospective teachers each year. Ratsoy, Friesen, and Holdaway (1987) evaluated this program, which was developed for both economic and pedagogical reasons. The economic reason was to employ surplus teacher education graduates. On pedagogical grounds the internship programs aimed to enhance the prospective teachers' skills and professional relationships and to provide grounds for assessing their suitability for the teaching profession. The evaluators concluded that the program was well conducted, well received, and generally attained its pedagogical objectives. They recommended this pilot project be succeeded by a permanent internship program. They found slightly more support for an optional program modelled on the pilot project than for either of two proposals for mandatory programs, one based in the universities and the other based in the school system.

Nova Scotia has both one of the last, if not the last, separate, non-degree-granting teachers college on this continent and seven degree-granting institutions with rather small teacher education programs. That province's Royal Commission on Post-Secondary Education (1985) was highly critical of this dispersion of effort, the lack of coordination among the institutions, and the spurious claims for specialization made on behalf of some of these programs. The report included calculations of teacher education graduates per full-time-equivalent education faculty member and found that for 1983/84 this figure ranged from 1.2 to 10.2 for the various institutions.

While reports proposing changes in teacher education and their concomitant political pressures ebb and flow, teacher certification exerts a constant, if less dramatic, external political pressure on teacher education programs. Not only do certification authorities have the power to dictate to the universities concerning the nature of the curriculum for teacher education, but they also reserve the right in the case of a shortage of teachers to provide emergency certification to as many individuals as are needed to staff the existing classroom. Gifford (1984) was particularly critical of the conservative influence the certification systems exert on teacher education curricula. Imig (1985) summarized the methods by which certification is granted. He noted both a proliferation of specialized certificates and some movement toward comprehensive certificates. He also reported that initial certification is in some jurisdictions contingent upon one or more years of successful teaching with a reduced load. Other jurisdictions have eliminated or modified the lifelong duration of teaching certificates. The reintroduction of examinations as a component of the certification process was the final trend he observed.

Shulman (1986) detailed some of the history of examinations for teacher certification and criticized the current certification tests for emphasizing teaching procedures to the absolute exclusion of subject matter. He proposed a professional examination to measure "deep knowledge of the content and structure of the subject matter, the subject and topic-specific pedagogical knowledge associated with the subject matter, and the curricular knowledge of the subject" (p. 10).

3. Teacher Education Faculty

The professional literature provides some insights into the academic and political challenges that teacher education faces. It is not nearly as illuminating with regard to those who must try to meet these challenges. Relatively little is known about teacher educators. Wragg (1982) did not even include the topic in his general review of teacher education.

Carter (1981, 1984) did an intensive analysis of 28 faculty members in the Curriculum and Instruction Department at a university in Texas. A composite picture of the members of this group emerged from an examination of the modes of the various distributions. Aspects of this picture include being just under 40 years old, having come from a blue collar family, having attended public schools, and having taught in the public schools for several years before moving into teacher education. Two factors emerged as the motivation for the career change from school teacher to professor. The desire to continue teaching was identified as one factor, and the other was the desire to work in an environment less prone to bureaucratic excess and isolation than the public schools.

In assessing the degree to which this group of faculty members acknowledged common responsibilities, Carter found general agreement concerning their duty for transmitting the skills of teaching to their students. She found less general but still strong agreement for accepting responsibility for the codification of knowledge about teaching. Acting as a gatekeeper to the teaching profession was accepted by some of the teacher educators but rejected by just as many. Service on university committees was viewed negatively. Participation in inservice programs for teachers was seen as neither very productive in its usual form nor very well regarded within the university as a whole.

Lanier and Little (1986) extended Carter's findings through synthesis with related work. They concluded:

> It is very likely that [teacher educators] obtain conformist orientations and utilitarian views of knowledge from their childhood experiences at home, educational opportunities in school, and restrictive conditions of work as teachers before coming to higher education. Thus the teacher educators closest to schools and prospective and practising teachers often assume professional work assignments and routines that demand minimal intellectual flexibility and breadth and require, instead, conformity and limited analysis. (p. 535)

Troyer (1986) reviewed these studies and 23 others concerned with characterizing teacher educators. Ciscell and Glass (1986) did a less extensive review of the same topic. Neither review extended the basic picture of those who teach in faculties of education.

Shea and Henry (1986) took the academic backgrounds of professors of educational foundations as the focus for their survey. The 242 respondents from across the United States had extremely varied specializations, representing 38 undergraduate majors, 37 departments at the masters level and 27 departments for the doctorates. These researchers were left wondering just what is foundational about courses in the foundations of education.

Shermis and Washburn (1986) found a similar diversity of educational backgrounds among the 25 professors of social studies education they surveyed. While a majority of the respondents endorsed the importance of social science concepts and methodology for their students, few had actually taken social science courses in their own undergraduate programs. Just less than half of those surveyed indicated quantitative courses were among the least desirable aspects of their own graduate education. Shermis and Washburn combined their demographic and attitudinal data to draw a picture of social studies educators as rather conventional figures out of touch with both the social sciences and the objects of these disciplines. Their findings, they claimed, could explain "why, despite 75 years of research into social problems and book after book on critical thought, there is so little of either in the social studies" (p. 339).

Zabel, Smith and White (1984) placed the emphasis on job satisfaction in their survey of special education faculty. They found job satisfaction varied with age, marital status, sex, academic rank, tenure, income, years as a professor and years in the present position. The factors associated with longer experience indicated more positive job satisfaction.

If little is known about who teaches education students, even less is known about the administration of teacher education. Anderson and King (1987) randomly selected 100 education deans and elicited responses from all of them. While virtually all had earned doctorates, two areas of specialization dominated. Educational administration and curriculum and instruction were about equally represented. Most of the deans rose to the position through teaching in public schools followed by teaching in their present faculty of education. Length of service as a dean varied inversely with the size of the institution.

4. Teacher Education Students

While education faculty members have been somewhat reluctant to study their colleagues, they have shown no such reluctance with regard to their students. Research about students in teacher education programs constitutes a large part of the teacher education literature. Lanier and Little (1986) noted, however, that this area of research is also problematic.

> Although there has been a good deal of data gathering and thought, there seems to be an excess of the former and a dearth of the latter. As a consequence, misrepresentation and overgeneralization of research findings has occurred in response to growing public interest. (p. 535)

One area in which Lanier and Little were particularly critical of other researchers relates to judgements about the academic qualifications of teacher education students. Many studies have focused on the mean scores registered on the Scholastic Aptitude Test by those proposing to enter a teacher education program. The common observation was that prospective education students scored lower than those planning to pursue other degree programs. Lanier and Little categorized as erroneous the inference from this fact to the commonly drawn conclusion that teacher education fails to attract any high ability students. Instead, they argued, teacher education does as well as can be expected in the intense competition for the best students. What drew the means down, they claimed, was not an absence of high scorers but an excessive number of low scorers.

One way to avoid the limitations inherent in using national averages and relying on statements of intentions is to actually compare education students with others at a particular university. Book, Freeman, and Brousseau (1985) reported the results of just such a study done at Michigan State University. They found that the education students were "very similar to their non-teaching counterparts in overall levels of academic preparation and academic potential" (p. 28). The differences they found were attitudinal rather than cognitive. Non-education students were less concerned about helping others and more concerned about financial gain than were education students.

Byers (1984), also working with students at Michigan State University, examined commitment to teaching and found, in contrast to an earlier national study, that the level of commitment to teaching did not decline as Scholastic Aptitude Test scores increased. He concluded that if an education program has a positive image, it can attract more capable and optimistic students. Andrew (1983) reached a similar conclusion in his study of students in the five year teacher education program at the University of New Hampshire.

Book and Freeman (1986), in another study of Michigan State University education students, found differences between students enrolled in the elementary education program and those registered in the secondary program. The secondary students were significantly more likely to have completed three years of mathematics and science in high school while the elementary students were more likely to have had prior experience in teaching situations with children. The subjects they planned to teach was the focus for the secondary students while elementary students were child-centered rather than subject-centered. Male secondary students had far less commitment to teaching than did either female secondary students or elementary students of either sex.

Zimpher (1988) did a national survey of students in teacher education programs and examined the students' motivation for choosing the particular university they were attending. Since the responses indicated that most education students were at universities within 100 miles of their homes and that these students were not influenced in their choices by either the reputations of the schools or the opinions of their peers, she concluded that the operative factor in their choice was contiguity. The university was there and attending it was convenient. These students' plans for the future were similarly limited culturally and geographically. They expected to teach middle class children near their home town and had little interest in either urban or special education.

In a local, longitudinal study that included only female students, Savage (1983) found that teacher education fared poorly relative to other disciplines in attracting good academic students. However, as the students in this cohort changed programs in their progress through their four years, the mean Scholastic Aptitude Test scores for the teacher education students increased. Savage concluded that education was attracting better students to transfer from other programs. Furthermore, when he examined the distribution of scores across disciplines he determined that "the top 60 to 75% of women in EDCI could be successful in nearly any other field of study" (p. 18). He also computed a measure of high school class standing and found that "women in EDCI compared quite favorably with those in other areas at the junior and senior levels" (p. 19). He explained the different perspectives produced by SAT scores and high school class standing by observing:

> In most education courses neither strong verbal or math skills as measured by the SAT are rewarded. What often is rewarded is task persistence and workmanship, qualities that

> might better be measured by high school class standing. (p. 19)

Savage (1984) also provided a critique of his own and other studies of this sort. After noting the deficiencies in the various measures, he criticized the assumption that there are no future teachers in the pool of students enrolled in programs other than education.

Some researchers have tried to assess the cognitive development of teacher education students in Piagetian terms. Silverman and Creswell (1982) found that 53% of the sample of elementary and secondary students they assessed were operating at the concrete level while the remainder had attained formal operational thinking. They examined whether logical reasoning ability, attitude toward mathematics or grade point average distinguished these levels of thinking. They found that the formal thinkers enjoyed mathematics more and feared it less than those at the concrete level. They also found that formal thinkers scored higher on some measures of logical reasoning. Grade point average did not distinguish the two groups.

Reyes (1987) used Piagetian tasks to compare teacher education students with students in other disciplines. While he also found large percentages of students operating at the concrete level, there was no statistical difference between teacher education students and the general university population.

Nelli and Atwood (1986) used Maslow's conative hierarchy to compare teacher education students and public school teachers. However, since the instrument they used measured only the first three of Maslow's six levels, the interpretation of the results was problematic. Physiological and safety needs did not distinguish the two groups, but the students scored significantly higher than the teachers at the love and belongingness level of the scale.

Yeazell and Johnson (1988) used Kohlberg's theory of levels of moral judgment to compare teacher education students and faculty. Three groups of students, freshmen, seniors, and graduate students, were assessed. The scores on a measure of moral reasoning indicated no differences among the student groups. The faculty scored significantly higher. When the student groups were compared to the test's norms, 34% of the undergraduates and 24% of the graduates recorded scores below those expected of senior high school students.

Several studies have examined education students' attitudes independently of any theory of cognitive or affective development. Marshall (1986) in a study of undergraduate education students at the University of Manitoba concluded that intrinsic benefits, such as working with children, were the prime motives for choosing teacher education. However, when these students were asked to assess their fellow students, less intrinsic motives were attributed to their teacher education classmates.

Curtis (1985a, 1985b) assessed education students at the University of British Columbia in terms of their attitudes towards the disabled and mainstreaming. The students were grouped by program. While special education students were found to be somewhat more accepting of the disabled than other groups of teacher education students, all the students exhibited only marginally favorable attitudes. Level of commitment to mainstreaming was similar among all groups, with favorable attitudes only toward the integration of mildly disabled students.

Frager (1987) touched on another aspect of the attitudes of teacher education students: their apparent lack of desire to read about their chosen profession. He described an intervention aimed at encouraging a group of these students to read during their summer vacation from a list of widely publicized trade books about schools and teaching.

5. The Demand for Graduates of Teacher Education Programs

Goodlad (1984) clearly expressed the dilemma that market conditions cause for teacher education:

> Educators' interest in teacher education wanes when there is an abundance of teachers....It is unfortunate that interest in teacher education increases most often in times of shortage because attention of those who employ teachers is almost always focused on increasing the supply at the expense of quality." (pp. 312-313)

During most of the 1970's and the first part of the 1980's, only a limited demand was evident for the abundance of teacher education graduates. Quality and quantity issues tended to be confounded under these circumstances. Schlecty and Vance (1983) tried to separate quantity from quality in their study of how declining markets affected universities differentiated by institutional reputations and graduates' scores on National Teacher Examinations. They found that the more competitive institutions that maintained the quality of their graduates experienced the greatest decline in market share followed by the least competitive universities. The middle range of universities that held or increased their market share seemed to have done so by admitting less able students.

Several studies seem to indicate a coming shortage of teachers in North America. Gerald, Horn and Hussar (1988) in a careful and cautious study of the demand for teachers in the U.S. through 1997 projected a steady rise in the total number of teachers. New hirings, resulting from turnover, enrolment changes and other factors, were projected to rise steadily from 1990 to 1995 followed by stabilization and then a slight decrease in the final year of the forecast. The market for secondary teachers was assessed as stronger than that for elementary teachers, particularly in the latter part of the forecast period. The Occupational Outlook Handbook (1986) reported similar conclusions. Weaver (1983), while concentrating on the academic performance of teacher education students, provided an historical analysis of teacher surpluses and shortages in the United States during the past century.

The Canadian Teachers Federation study, Projections of Elementary and Secondary Enrolment and the Teaching Force in Canada 1987-88 to 2006-07 (1989), based its projections on fertility and migration data. The projection period was broken into four five-year intervals. For elementary teachers the demand was projected to rise and then stabilize in the first two intervals, then to fall. The projection for secondary teachers involved an increase in demand for the first two intervals followed by stabilization and a final interval of decline.

Smith (1989) examined Ontario data regarding both eligibility for retirement among current teachers and enrolment in teacher education programs. She found that the province has an imminent teacher shortage with the entire pool of new graduates necessary to replace retirees within a few years. The generation of graduates from the years of teacher surplus will not, in her view, be available for these positions. She also noted that Ontario school boards have begun "to recruit across Canada and beyond for the first time in many years" (p. 43).

The British Columbia Royal Commission on Education (1988) assumed a constant pupil teacher ratio and a constant attrition rate among teachers. The Commission also assumed a current surplus of 8000 qualified teachers in that province. The surplus and the current graduates were seen as providing an adequate supply of teachers until 1991. Then, even if enrolments in teacher education programs are raised to the levels of the late 1970's, there will still be a provincial shortage of 500 teachers per year.

THE GOALS OF TEACHER EDUCATION

1. Overview

The dominant assumption of teacher education, indeed of every professional program, is that completion of the program indicates both some professional development and the capacity for further development. Graduates should emerge from the program better able than when they entered to meet the responsibilities of the teaching profession. Exceptions exist, but they are rare. Damerell (1985) described a graduate program in education which apparently aimed for social change in the larger society, rather than for any professional development in the individuals who completed the program.

One major problem with defining goals for teacher education is the lack of agreement about the professional responsibilities of teachers. There may be a better consensus regarding such matters in other professions, but the recent literature on teacher education fails to manifest any unanimity. The norms that normal schools were supposed to inculcate no longer exist.

Brousseau and Freeman (1988) demonstrated the existence of substantial disagreement within a single faculty of education concerning what constitutes a desirable set of beliefs for teacher education graduates. The researchers presented each faculty member with a set of 53 belief statements about teaching and asked how graduates of the program should respond to each. For each question the number of faculty members indicating a negative response would be appropriate was subtracted from the number favoring a positive response. The resultant indicator was calculated by comparing the absolute value of the differences to the total number of responses. The level of disagreement was shown by the fact that over half of the statements elicited an indicator of less than 50%.

Fullan, Wideen and Eastabrook (1983) examined the degree to which the actual goals in Canadian teacher education programs fall short of what the students and faculty felt would be the case in an ideal program. The respondents indicated the degree to which each of nine statements expressed actual and ideal goals of their program. On average both groups rated all of the statements higher as ideals. The patterns indicating the discrepancy between the ideal and real situations were similar for both students and faculty.

There is no lack of ways to differentiate the goals of teacher education. Short (1987) reviewed the literature proposing unifying themes for teacher education. He found 28 different concepts that have been suggested as the basis around which a teacher education curriculum might be built. Emans (1981) identified four approaches to teacher education: preparation, imitation, clinical and reflective. Goodman (1986) surveyed the perceived outcomes of a methods course for elementary education students. He distinguished three roles the course served, to be relevant, liberalizing and critical. A simpler division of goals is used in this compilation. The literature has been divided into two groups. One emphasizes goals of the discrete and demonstrable sort. The other focuses on broader qualities of mind.

2. Discrete Goals

Houston and Newman (1982) reviewed the rise and decline of competency-based teacher education programs. The proponents of these programs advocated explicit, discrete, and demonstrable objectives for teacher education. The content of these goals was derived from the observed or conceptualized role of the public school teacher, but the specific competencies that teacher education students were to demonstrate varied considerably from one program to another.

Ginsburg (1988) did an ethnographic and historical study of the development of the competency-based teacher education program at the University of Houston. He explained how this radical departure was initiated in the 1960's by the combination of large increases in funding and enrolments and a dean ambitious to achieve a national reputation for the school through innovation in the preparation of teachers. Ginsburg analysed the implementation of the modular program in terms of the deskilling and proletarianization of the professorate. The subsequent intervention of the Texas State Board of Education, which promulgated a policy requiring that teacher education programs in that state be competency-based, focused resistance from those faculty with contrary views. Faculty in the foundation fields were prominent in their opposition. Ginsburg, with little sympathy for individuality or academic freedom, expressed his conclusion that both the innovators and the resistors were elite groups oriented toward the preservation of inequality.

The narrow and extremely atomistic goals established in competency-based teacher education found few advocates and many critics in the teacher education literature during the 1980's. One of the severest of these critics, Broudy (1984), analysed how teaching competence was identified, achieved and tested in such programs. Evertson, Hawley and Zlotnik (1985), in a more favorable assessment, predicted a reincarnation in various guises of competency-based teacher education as the result of the political pressure associated with teacher-evaluation. Medley (1984) clarified issues in teacher competency testing and related them to teacher education's gatekeeping function.

The word "competency" did appear frequently in the literature regarding teacher education for the integration of special needs students. Usually specific competencies required for this task were identified. Center and Obringer (1986) found this approach too limiting and surveyed teacher educators, special education teachers and state directors of special education about their assessment of the relative importance of 25 survey topics related to special education teacher preparation. They found a high degree of agreement concerning which topics are important for an undergraduate course. Less agreement was evident in the ranking for the graduate level.

Sets of goals, broader than those promulgated for competency-based teacher education but still focused on observable teacher skills, appeared frequently in the teacher education literature of the 1980's. Medley (1988) delineated desirable competencies resulting from perceptual skills, professional values, professional judgment and performance skills. He explained these in the context of goals for teacher education programs and elements for the assessment of teacher education students.

Stallings (1987) reviewed the research on teacher effectiveness and recommended, in concert with many previous proposals, such as Brophy (1984), that this research be used to establish goals for teacher education programs. She specified competencies related to planning, classroom management, instructional strategies and evaluation as being appropriate to incorporate in teacher education programs.

Brophy (1988) suggested goals for teacher education related to classroom management, student socialization and disciplinary intervention. He described the knowledge base concerning classroom management and indicated that conceptual change teaching is required to counteract the prevalent misconceptions teacher education students have about this topic. Acknowledging that there is neither coherent knowledge about student socialization or disciplinary interventions nor agreement about the teacher's role in these areas, he still proposed that an integrated approach to classroom management, involving the other two topics, be a goal for teacher education.

Berliner (1985) expressed the similar view that a body of knowledge and a set of concepts now exists to analyse classroom phenomena. The implication he drew was that teacher education ought to be laboratory based. His ultimate goal, an analytic rather than a practical orientation for teachers, would, he concluded, be realizable in a laboratory based program in a way it could never be in a reformed teacher education program based only on increased subject specialization and longer student teaching.

The teacher competency and teacher effectiveness approaches to teacher education are similar in focusing on goals related to classroom methodology. But these approaches do not exhaust the range of specific goals proposed for teacher education. Ben-Peretz (1984) argued that curriculum theory and practice in curriculum development should have a central role in teacher education programs. Buchmann (1984) defended placing the priority on knowledge of the subjects to be taught. Howey and Strom (1987) synthesized research on conceptual, moral and ego development to define goals for both teacher education and teacher selection.

Greater integration of content and method was the goal expressed in several papers. Cooney (1988) considered the education of mathematics teachers and concluded that the dichotomy between subject and methods courses is counterproductive. Instead, he proposed the adoption of a combined goal under which prospective mathematics teachers would have experience constructing the same mathematics they would eventually teach. Galbraith (1982) focused on mathematical misunderstandings among teacher education students and secondary students. He found similar results with the two groups and inferred that the knowledge the teacher education students require to become effective mathematics teachers could not be obtained from the standard content or methodology courses.

When Tamir (1988) formulated goals for an entire curriculum in teacher education, he emphasized the integration of content and methodology through the development of content specific pedagogical knowledge. Gudmundsdottir and Shulman (1987) reported an attempt to derive integrated goals for teacher education through observation of the difference in approach of two social studies teachers, a novice teacher and a teacher with extensive experience. The goals related to the knowledge of social studies specific pedagogy that the novice teacher would have to acquire to function at the level of the experienced teacher. Shulman (1987) built on research of this type to propose a comprehensive plan for teacher education.

3. Reflection as a Goal

In the 1980's those inclined to view the goals of teacher education in holistic fashion often encapsulated their views in the word "reflection" and its derivatives. A reflective teacher was seen as one who has the qualities of mind desirable for members of the teaching profession. The Ontario

Ministry of Education (1988) expressed the desire for "teachers who are reflective, critical and inquiring" (p. 50). The emphasis among those who wrote about reflection was on the sorts of abilities that would be evident through the course of a career in teaching, rather than on skills that would be detectable through a small number of discrete observations.

While all who wrote about reflective teachers paid homage to John Dewey, this common ancestry, perhaps not surprisingly, failed to produce any uniformity of purpose or method. Three incompatible interpretations of reflective teaching appeared in the literature. They ranged from one that could be considered in harmony with any number of discrete goals for teacher education to one that was strictly opposed to the sorts of reasoning expressed in defense of distinct goals.

Cruickshank (1985, 1987) was the most analytic of the three. He recommended reflective teaching both as a goal for teacher education and as a method for reaching that goal. The goal, reflective teaching, he defined (1987) as a process which involves "meditation, musing, contemplation, pondering, deliberation, cognitive reasoning, and speculation" (p. 3) about teaching. The method, also called reflective teaching, required small groups of teacher education students to simulate and reflect on classroom learning experiences. Each student in turn had to plan and teach a lesson to other members of the group, test learner achievement and satisfaction, and engage the group in reflecting about the process. Cruickshank structured the goals for the lesson to minimize the effects of previous learning. Any method could be used to teach the lesson. Cruickshank exemplified his approach with a description of the origami lesson, the goal of which is to have each student construct a paper butterfly.

Zeichner (1981) based his version of reflective teaching on Dewey's concept of reflective action. Dewey (1933) identified openmindedness, responsibility and wholeheartedness as the three components of reflective action. Zeichner developed this concept into a political framework. His object of reflection was not limited to the teaching-learning process in the public schools as they are, but included, indeed emphasized, the process of schooling as it might be. He proposed:

> An approach that not only recognizes student teachers' needs to cope in the present but also takes them beyond an uncritical acceptance of the present and empowers them to scrutinize collectively the ideological

> assumptions imbedded in that which is taught in our educational institutions. (p. 11)

The method Zeichner instituted to meet this goal at the University of Wisconsin was a series of seminars held concurrently with the practice teaching experience. The seminar topics involved critical assessments of educational issues or classroom problems. The emphasis was not on solutions per sé but on exposing the students to "diverse and conflicting positions on any topic" (p. 13). While Zeichner distanced himself from the view that intellectual analysis necessarily leads to social change, his ultimate goal for reflective teaching was quite clearly "the transformation of that which is oppressive and unjust" (p. 17).

Schön (1983, 1987) used professions other than teaching to develop his concept of reflection-in-action, but his works have been widely cited in the teacher education literature. Reflection-in-action was built on a view of how and what professionals know. This view was exactly contrary to the standard perspective that professionals are applied scientists deducing from the general rules solutions to fit the particular situations. Schön based his call for an artistic and intuitionistic approach to professional practice on a constructivist view of reality.

> Through countless acts of attention and inattention, naming, sensemaking, boundary setting, and control, [professionals] make and maintain the worlds matched to their professional knowledge and know-how. They are in transaction with their practice worlds, framing the problems that arise in practice situations and shaping the situations to fit the frames, framing their roles and constructing practice situations to make the role-frames operational. (1987, p. 36)

Schön's examples of professional practice, such as design, counselling, and musical performance, fit well with this view that the professional constructs his own world. Kennedy (1987) reviewed the literature on professional education and related it more specifically to teacher education. She set Schön's view of expertise as deliberate action into a broader perspective, relating it to the less complex views of expertise as technical skill, as the application of theory, or as critical analysis.

Clark (1988) reviewed the research on teacher thinking. Studies of how teachers reflect and plan were included along with studies of teacher's perceptions and studies of how teachers deal with uncertainty and think through dilemmas.

Gore (1987), Calderhead (1989), and Richert (1987/1988) each summarized and commented critically on the extensive literature about reflective teaching. Zimpher (1986) reviewed Schön (1983). Goodman (1984) described practice teaching seminars to encourage reflective teaching. Hillkirk and Dupuis (1988) described a journal-based approach to encourage reflection during practice teaching. Richert (1987/1988) also reported the results of her research which was designed to facilitate reflective teaching. Using a small group of student teachers, she studied the effects of two factors, a colleague with whom reflection about teaching was possible and a portfolio that could be constructed as an individual's reflective device. The student teachers were differentiated according to whether they had none, one or two of these facilitating factors. She found a development in the resultant level of reflection. Those with neither facilitating factor produced personal reflections. The construction of a portfolio shifted the reflection to the content of instruction. The presence of a partner produced reflection about social aspects of teaching. Those who had both facilitators reflected on content-specific pedagogy.

THE RESULTS OF TEACHER EDUCATION

Evertson, Hawley and Zlotnik (1984, 1985) reviewed the research studies that related teacher education to teaching or learning in the public schools. Two types of global studies were found. One, in which teachers' classroom performance was analysed for evidence of what was learned in a teacher education program, showed only short-run efficacy. They found little evidence of any long term transfer of learning from teacher education programs to the school classroom. The other research paradigm compared provisionally certified and regularly certified teachers. Eleven of the thirteen studies of this type concluded that regularly certified teachers were more effective.

In a later study of this second type, Dewalt (1986/1987) reported equivocal results. Using trained observers, he rated all new secondary teachers in Virginia in 1985/86 on twelve competencies derived from teacher effectiveness research. The graduates of teacher education programs scored significantly better on two of the twelve measures. Eight competencies showed no significant difference while two favored the teachers who lacked teacher education. Dewalt did find a significant difference in the variability of the scores for the two groups. Greater variation in scores was recorded for individuals without teacher education.

Evertson, Hawley and Zlotnik (1985) also examined the research related to programs proposed or implemented to improve teacher education. They found screening, either for admission or certification, to be relatively devoid of supporting evidence. Of all the screening measures proposed, they found only the teacher's verbal ability correlated with subsequent student performance. Schalock (1988) also found disappointing results in his review of possible predictors of success in teaching.

Evertson, Hawley and Zlotnik (1985) found little research on the consequences of increasing certain components of teacher education. Subject knowledge of science teachers was found to be positively related to student learning, but similar evidence was lacking for other subjects. They found no studies of the effects of liberal arts courses as part of teacher education, nor did they find any teacher education programs that tried to incorporate a significant part of what they assessed as the current knowledge base for pedagogy.

In examining earlier efforts in teacher education reform, Evertson, Hawley and Zlotnik (1985) concluded that the research on competency-based teacher education and microteaching indicated both could be pedagogically effective. However, the available research, they suggested, indicated that the proponents of student teaching have overrated its value.

Ashton, Crocker and Olejnik (1986) also reviewed the literature relating teacher education to student performance. Most of their conclusions were similar to those of Evertson, Hawley and Zlotnik, but there were a few differences. Ashton, Crocker and Olejnik found some general evidence that the number of university courses a teacher had taken in a subject correlated positively with their students' achievement. They also found a tendency for teachers with higher grade point averages to have higher student achievement in their classes.

Emmer (1985) in his review of the research on learning to teach concluded that "the clinical components of learning to teach are intense interpersonal experiences, rather than focused on the acquisition of specific skills or models of teaching" (p. 24). Feiman-Nemser and Buchmann (1987) used two case studies to assess how student teaching has functioned in teacher education. They concluded

> For student teaching to be teacher education, it must go beyond survival or extend [sic] practice in the outward forms of teaching to sort out appropriate from inappropriate lessons of experience. ... The current structure of student teaching makes these goals difficult, at best, to achieve. (p. 272)

Zeichner and Grant (1981) in studying ideas about pupil control held by student teachers found that "the student teaching experience is a low impact enterprise that plays little part in altering students' earlier ideas about teaching" (p. 307).

Borko, Lalik and Tomchin (1987) examined student teachers' assessments of their own development. They found among the student teachers a uniform and stable conception regarding what constituted successful teaching. This concept seemed to predate their pedagogical preparation. The researchers found that weaker student teachers were aware of the discrepancy between this concept and their performance.

Nelli (1984) responded to criticisms about the quality of prospective teachers' subject knowledge. Using data for graduates of a single university, she compared the grade point average in content courses of secondary teacher education graduates with the averages for graduates who majored in the same subjects through the arts or science faculties. She found no significant differences between the mean scores of the two groups. Cohen (1984) completed a similar comparison with a larger set of data and found a slight advantage in favor of the teacher education graduates. Barger and Barger (1984) focused on academic achievement at university in comparison with assessed potential prior to entering university. They found that the teacher education graduates had entered university with lower scores on tests of academic aptitude than graduates in other programs, but the teacher education graduates had as good or better actual academic achievement as graduates from other programs.

Oberlin (1980) compared a conventional and a minimum standards approach to increasing the science content knowledge of elementary education students. At the time of graduation she retested both groups and found no difference in achievement. Scharmann (1988) also examined elementary education graduates' understanding of science. He focused on the outcomes of integrated and separate content and methods courses and found that separate courses were more efficacious in developing scientific understanding.

Skipper and Quantz (1987) compared the attitude changes toward educational practices that occurred in a teacher education program and in arts and science programs at the same university. While the arts and science students expressed more progressive attitudes toward the process of education than the teacher education students did when they were both assessed as freshmen, the reverse held at the time of graduation. Both groups increased their scores of progressiveness, but the teacher education students changed more.

Newton and Brathwaite (1987), working at the University of the West Indies, surveyed secondary teachers enrolled in a one-year inservice program during which they obtained their initial formal teacher training. The teachers' assessment of the relative importance of various skills was compared with their evaluation of the program's effectiveness in generating these skills. The researchers found that in general the program was perceived to be more effective for the more important skills.

Lampert (1988) synthesized what is known about educating mathematics teachers in the light of the mathematics achievement that is wanted in the schools. She gave a tentative but positive response to the possibility that teachers can learn a view of teaching mathematics that goes beyond facts and procedures. She indicated, however, that producing the appropriate circumstances for this learning to occur on a large scale in teacher education programs is still problematic.

Leyser and Bursuck (1986) surveyed teacher education graduates who had taken a course on mainstreaming during their program. As teachers they reported the survey course was their most useful source of mainstreaming information, though they assessed some components of the course as much more useful than others.

EPILOGUE

This review of the literature of teacher education can report no dramatic developments. The 1980's did, however, produce many significant, if small scale, reports that laid the foundation for further research efforts. Some important questions were clarified, and some observations of consequence were noted. The opportunity exists to build on this foundation. While some writers, such as Tom (1980), expressed the view that such efforts are futile, several, including Katz and Raths (1985) and Zimpher and Ashburn (1985), developed carefully thought out and clearly expressed research agendas for teacher education. Smith (1985) provided examples of research findings applicable to teacher education.

There were many reports about teacher education from the 1980's that this review failed to mention. Some must count as oversights, but others were simply rejected. Among the rejected were far too many of the process-product variety that, in the typical instance, found only that teacher education students exposed to a learning situation actually learned something. Further efforts of this type seem to hold little promise.

A more promising development in the advancement of knowledge about teacher education is the major research project described by Goodlad (1988). Having clarified their own assumptions and derived a set of postulates about teacher education, Goodlad and his colleagues examined teacher education programs in eight states. The findings of this study remain to be published. Whatever they may be, at least this study does not appear to suffer, in terms that Lanier (1984) applied to teacher education in general, "from the illusion that great things can be obtained with minor investments of time and resources" (p. 24).

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NEW BRUNSWICK TEACHERS' ATTITUDES TOWARD INTEGRATION

by

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A Research Report for the
New Brunswick School Research Consortium

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ABSTRACT

The integration of exceptional children into the regular classroom has become an integral part of the educational milieu in the Province of New Brunswick. The passage of Bill 85 (Amendments to the Schools Act) in 1986, gave all exceptional children in the province the legal right to a free, public education appropriate to their individual needs.

This study examined teachers' attitudes toward integration in order to determine: (1) the underlying dimensions of teachers' attitudes; and (2) the relationship between teacher demographic variables and teachers' attitudes.

The population for this study consisted of those Anglophone New Brunswick regular classroom teachers who are currently teaching in an integrated setting. This group was chosen because they have been directly affected by the enactment of Bill 85.

A two-part questionnaire was distributed, by mail, to a random sample of 200 teachers in order to collect the necessary demographic information and solicit teachers' attitudes toward integration. The attitude survey portion of the questionnaire consisted of a 25-item Likert scale.

The attitude survey produced adequate reliability for the New Brunswick sample yielding a Cronbach's alpha of .892. The average scale score over all respondents indicated that teachers' attitudes toward integration lean in a positive direction.

Factor analysis of teachers' attitudes toward integration produced four measurable dimensions accounting for 40 percent of the total variance. Multiple regression analysis did not produce any significant relationship between teacher demographic variables (age, gender, years of teaching experience, certificate level, grade level taught, pre-service education, and in-service training) and teachers' attitudes toward integration on the 25-item scale. Similar results were obtained on the subscales "Effects of integration on the social development of all students", "Effects of integration on teacher workload", and "Negative effects of integration" as identified by factor analysis. Certificate level was found to be a significant predictor of teachers' "Willingness to teach exceptional children".

Qualitative analysis of respondents' written comments identified five major areas of teacher concern regarding integration: (1) Defining exceptionality and the question of total integration for all students; (2) Adequacy of support services and class size reductions; (3) Lack of time to teach all students; (4) Acceptance of exceptional children by peer and teachers; and (5) Lack of training to deal with exceptional children.

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Chapter 1

INTRODUCTION

The integration of exceptional children into the public school system has been evolving rapidly over the past two decades. The basic assumption is that a caring society will provide an education system which educates all children according to their individual abilities and needs (McLean, 1983 March).

This philosophy which attempts to bring harmony between the values in society and the practices in schools has been summarized by Mosley (1978:4) who commented:

> The philosophical perspective which underlies integration is consonant with the principle of normalization which stresses that environments for retarded individuals be made as similar as possible to the environments found in society at large.

Integration has recently become an essential component of the New Brunswick educational system. The enactment of Bill 85 (Amendments to the Schools Act) in 1986, compelled all school districts to respond to the educational needs of exceptional children. Bill 85 ensured that all students receive an education in public schools "... to the extent that is considered practicable by the board having due regard for the educational needs of all pupils" (Schools Act Section 45 (2.1)).

As more school districts in the province move toward total academic integration, the bulk of the responsibility for the exceptional childs' education will rest on the shoulders of the regular classroom teacher. Hudson et al. (1979) suggest that of primary importance to the success of integration is the willingness of regular educators to accomodate the integration principle and that teachers' attitudes toward integration are crucial in this respect.

1.1 Statement of the Problem

This study examined the attitudes of Anglopnone New Brunswick teachers toward the integration of exceptional children into the regular classroom. Specifically, this research attempted to determine: (1) the factors which underlie New Brunswick teachers' attitudes toward integration and (2) the relationship between teacher demographic variables and teachers' attitudes toward integration.

1.2 Significance of the Study

This research is significant for several reasons. First, since this research was in part a replication of a series of attitudinal studies by Margret Winzer and her associates, only in a different setting, the results obtained from this study will further validate the usefulness of her 25-item scale as an instrument for attitudinal measurement. Second, this is the first comprehensive study of regular classroom teachers' attitudes toward integration in the Province of New Brunswick since the enactment of Bill 85. Third, the data collected in this study will validate, and hopefully add to, the findings of the New Brunswick Teachers' Association study on integration conducted in 1987. Forth, the data collected in this study will also validate the findings of the English and French Integration Review Committees studies conducted for the Department of Education in 1988.

1.3 Assumptions

For this study the author has made the following assumptions: (1) that the attitudes toward integration of a random sample of Anglophone New Brunswick regular classroom teachers, currently teaching in an integrated setting, represent the attitudes toward integration of the population of over 1300 teachers from which the sample was drawn; and (2) that the responses provided on both parts A (Demographic Information) and B (Attitude Survey) of the questionnaire are genuine and honest.

1.5 Limitations

For this study, two important limitations must be recognized. First, at the time that the data for this study was being collected, teachers in the province had withdrawn all voluntary services to back their contract demands. Since one of the major issues in the negotiations was government funding for integration, it is possible that the contract dispute may have influenced teachers' attitudes toward integration.

Second, at present there are inconsistencies in the extent to which integration is being implemented in school districts across the province. Some districts have committed significant resources to the process of integration whereas other districts are moving ahead only as fast as government policy dictates. It is possible that teachers' attitudes toward integration could be a function of the degree of implementation within their district.

1.5 Definition of Terms

Integration (Mainstreaming) - The process whereby handicapped children are educated within regular classroom or educational environments that are as close to normal as possible depending on their educational needs (Horne, 1985:17).

Attitude - A mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's reponse to all objects and situations with which it is related (Allport, 1935).

Bill 85 - Refers to legislation, passed by the government of New Brunswick in 1986, which amended the Schools Act to include exceptional pupils formerly receiving special education programs and services under the Auxillary Classes Act (Adams, 1986 November).

1.6 Statement of Hypotheses

Based on the information gathered for this study, the following null hypotheses can be made:

(1) There is no significant relationship between the teacher demographic variables (age, gender, years of teaching experience, certificate level, grade level, amount of pre-service education, and amount of in-service training) and teachers' attitudes toward integration at the .05 level on the full 25-item scale.

(2) There is no significant relationship between teacher demographic variables (age, gender, years of teaching experience, certificate level, grade level, amount of pre-service education, and amount of in-service training) and teachers' attitudes toward integration at the .05 level on each of the four subscales identified by factor analysis.

Chapter 2

REVIEW OF THE LITERATURE

As a result of legislative changes, occuring in both the United States and Canada, increasing numbers of exceptional children are being educated in regular classrooms with teachers who have limited experience in dealing with their problems. Because teachers are known to influence the behavior of their students, much educational research over the past decade has focused on the attitudes of teachers toward handicapped children and the integration principle.

Most attitudinal studies fall into one of three categories. First, general attitudinal studies explore the acceptance of teachers toward integration and handicapped children. Second, studies have investigated the variables that affect teachers' attitudes toward handicapped children and the concept of integration. Included here are studies which explore the relationship between demographic variables and attitudes toward integration. Third, studies have attempted to identify the underlying dimensions of teachers' attitudes toward integration.

2.1 General Attitudinal Studies

Earlier research has shown that educators are not overwhelmingly supportive of the integration principle. Two independent studies by Hudson et al. (1979) and Goupil and Brunet (1984) found that the majority of regular educators surveyed were not supportive of the concept of integration and thought that special class placement would be best for handicapped children.

However, other studies have shown that educators are becoming increasingly supportive of the concept of integration. Studies by Winzer and Rose (1986), and Winzer and Chow (1988a,c) found that teachers surveyed leaned positively toward the concept of integration. Similarly, Ogletree and Atkinson (1982) and Ringlaben and Price (1981) surveyed regular classroom teachers and found that the majority had a favorable attitude toward integration and stated that they would accept special needs children into their classrooms given the option.

2.2 Age Studies

Several researchers have found no significant relationship between a teachers' age and their attitude toward integration (Mark, 1980; Reynolds et al., 1982; Stephens and Braun, 1980; Stewart, 1983; Winzer, 1984a,b; and Winzer and Rose, 1986). Contrary to these findings, Harasymiw and Horne (1975), Hughes et al. (1973), Stainback et al. (1984), Winzer (1987) found significant relationships between teacher age and their attitudes toward integration. Specifically, Hughes et al, (1973) and Winzer (1987) found that older teachers were more positive in their attitudes toward integration than were younger teachers whereas, Harasymiw and Horne (1975) and Stainback et al. (1984) found younger teachers to be more favourable in their attitudes toward integration than were older teachers.

2.3 Gender Studies

There is evidence to suggest that gender differences among teachers do account for differences in their attitudes toward handicapped children and integration. Studies by Winzer (1984a,b), Winzer and Rose (1986), Winzer and Chow (1988a,c), found that female teachers were more accepting of handicapped children and the concept of integration than were male teachers. However, other studies have found that female and male teachers are not significantly different in their attitudes toward handicapped children and integration (Harasymiw and Horne, 1975; Ringlaben and Price, 1981; Stainback et al., 1984; Stephens and Braun, 1980; and Winzer, 1987).

2.4 Teaching Experience Studies

The majority of studies researched found that the amount of teaching experience has no significant effect on teachers' attitudes toward integration (Mark, 1980; Reynolds et al., 1982; Rogers, 1987; Stainback et al., 1984; Stephens and Braun, 1980; Stewart, 1983; Winzer and Rose, 1986; and Winzer, 1987).

Nevertheless, studies by Bond and Dietrich (1982), Mandell and Strain (1978), and Winzer and Chow (1988a) found that teachers with more teaching experience harboured less favourable attitudes toward integration than did teachers with less teaching experience.

2.5 Certificate Level Studies

Results from several studies overwhelmingly suggest that teacher certificate level is not significantly related to teachers' attitudes toward integration. Studies by Bond and Dietrich (1982), Hudson et al. (1979), Mark (1980), Reynolds et al. (1982), Ringlaben and Price (1981), Rogers (1987), and Stewart (1983) all found no significant differences in teachers' attitudes toward integration based on their certification level.

2.6 Grade Level Studies

Comparing the attitudes toward integration of elementary and secondary teachers, Hanrahan and Rapagna (1987), Stainback et al. (1984), and Stewart (1983) found no significant differences in attitudes based on grade level taught. Similarly, in a study of Newfoundland educators attitudes toward integration, Winzer and Chow (1988c) found no significant differences in attitudes based on grade level taught.

Nevertheless, another series of studies suggest a relationship between teachers' atitudes toward integration and the grade level that they teach. In two separate Canadian studies, Winzer and Rose (1986) and Winzer and Chow (1988a) found that teacher's attitudes toward integration decreased as their grade level increased. Similarly, Stephens and Braun (1980), in a study of regular classroom teachers from kindergarten through grade eight, found that primary (K-3) and middle grade teachers (4-6) were more willing to integrate handicapped students than were teachers of grades seven and eight. In another study, Larrivee and Cook (1979) reported that kindergarten through grade three teachers had the most positive attitudes toward integration, followed by grade four through six teachers, then senior high teachers and last by junior high teachers. However, they did not offer any explanation to why senior high teachers held more positive attitudes toward integration than did junior high teachers.

2.7 Pre-Service Education Studies

Considerable attention has been given to the relationship between knowledge about, and preparation for, teaching handicapped children (pre-service) and teachers' attitudes toward integration. In a survey of regular classroom teachers from kindergarten through grade eight, Stephens and Braun (1980) reported that teachers who had taken courses in special education were more willing to accept handicapped students into their classes than were teachers who had not taken such courses. Likewise, both Hanrahan and Rapagna (1987) and Mandell and Strain (1978) found a positive correlation between teachers' willingness to teach handicapped children in an integrated setting and the number of special education courses they had. Yet, contrary to the findings of Stephens and Braun (1980), Hanrahan and Rapagna (1987) and Mandell and Strain (1978), two independent studies by Rogers (1987) and Stainback et al. (1984) found no significant relationship between teachers' attitudes toward integration and their special education coursework.

2.8 In-Service Training Studies

The majority of studies that have attempted to modify teachers' attitudes toward integration have been conducted in an in-service setting. Results from several studies (Finell et al., 1980; Gentry, 1979; Glass and Meckler, 1972; Harasymiw and Horne, 1975, 1976; Haring, 1957; Hudson et al., 1983; Leyser and Abrams, 1984; and Stainback et al., 1983) all suggest that in-service education is effective in developing more positive attitudes toward handicapped children and the concept of integration.

Specifically, Leyser and Abrams (1984) and Hudson et al. (1983) found that practising teachers who participated in an in-service program, which provided a general overview to the integration philosophy, as well as information on teaching skills, classroom and time management, and diagnostic assessment techniques, had significantly more positive attitudes toward integration at the completion of the program. Glass and Meckler (1972), designed and conducted a summer workshop to enhance the ability of regular classroom teachers to work with mildly handicapped children in regular classrooms. Post-test results on an attitude survey instrument showed that the participants were more positive toward regular classroom placement and saw themselves as more able to teach mildly handicapped children.

Results of other studies, designed to modify attitudes through in-service programs, demonstrate how hard it can be to affect attitude change. Hendricks and Sloan (1981) studied the effect of an in-service program on the concerns and needs of regular classroom teachers toward integration. Post-test results indicated that the in-service program had little or no impact on teachers' concerns and needs towards integration. Similarly, Beare (1985) concluded that six days of in-service produced no significant differences in participating teachers' attitudes toward integration. Studies have also shown that changes in atitudes have occurred in a negative direction as a result of in-service training (Bradfield et al., 1973; Shotel et al., 1972; and Warren et al., 1964).

Collectively, the forementioned studies do show that teachers' attitudes toward integration are affected by demographic variables, however, these studies fail to establish any clear relationship between the variables and teachers' attitudes toward integration.

2.9 Dimensions of Teacher Attitudes

In education, teachers' feelings and beliefs are thought to influence their attitudes toward the integration of exceptional children (Baker and Gottlieb, 1980). Several studies have investigated teachers' feelings and beliefs in an attempt to identify the components, or factors, which form the underpinnings of their attitudes toward integration (Baker and Gottlieb, 1980; Biklen, 1985; Centre and Ward, 1987; Hannah and Pliner, 1983; Harasymiw and Horne, 1975, 1976; Hudson et al., 1979; Kennon and Sandoval, 1978; LaMore, 1984; Ogletree and Atkinson, 1982; Reynolds et al., 1982; Shotel et al., 1972; and Stephens and Braun, 1980). From a comprehensive review of these studies, the following is a list of eight components thought to underlie teachers' attitudes toward integration: (1) teachers' perceived ability to teach exceptional children; (2) availability of support services; (3) academic and social development of regular and exceptional children; (4) teacher input into the decision-making process; (5) teacher training; (6) knowledge about handicapping conditions; (7) classroom and time management; and (8) general philosophy toward mainstreaming.

Another area of study involves the factor analysis or principal components analysis of completed attitude questionnaires to determine the dimensions which underlie teachers' attitudes toward integration. With this purpose in mind, Ringlaben and Price (1981) developed a twenty-two item questionnaire to be distributed to a sample of teachers in small city school districts in central Wisconsin. Returned questionnaires, subjected to principal components analysis followed by varimax rotation, yielded two components of teachers' attitudes toward integration. The first component, labelled "Education-social philosophy dimension", was defined by such items as: agreement with the philosophy of mainstreaming; effect of mainstreaming on the mainstreamed student; effect of regular students on the mainstreamed students; and in-service work on mainstreaming. The second component, labelled "Educational-academic content dimension", was defined by such items as: course work in mainstreaming; and knowledge of laws and policies about mainstreaming.

In a massive study, Larrivee and Cook (1981) developed a thirty item Likert-type questionnaire and administered it to a sample of nearly 1000 regular classroom teachers to assess their attitudes toward integration. Factor analysis of the data isolated five dimensions of teachers' attitudes, accounting for 52.4 percent of the total variance. The five dimensions isolated were described as: (1) general philosophy of mainstreaming; (2) classroom behaviour of special needs children; (3) perceived ability to teach special needs children; (4) classroom management with special needs children; and (5) academic and social development of the special needs child.

Two studies reported by Gans (1985, 1987) measured the attitudes toward integration of a sample of regular and special educators using a Likert style questionnaire. A principal component analysis revealed four factors, underlying teachers' attitudes, accounting for 52 percent of the total variance: (1) confidence in knowledge and skills; (2) effects on the classroom; (3) time; and (4) appropriate placement for special needs children.

Winzer and Chow (1988a,c) in a pair of Canadian studies, developed a twenty-item Likert style questionnaire to be used to assess the dimensions of teachers' attitudes toward integration. Factor analysis of questionnaires from the two samples, Winzer (1988a) teachers from British Columbia, Ontario and Newfoundland, and Winzer (1988c) teachers from Newfoundland, yielded three factors. Factor 1, accounting for 26 percent of the variance, was labelled as "Positive effects of mainstreaming on all students";

factor 2, accounting for 12 percent of the variance, was labelled as "Negative effects of mainstreaming on all students; and factor 3, accounting for 6.5 percent of the variance, was labelled as "Teacher workload".

The results of these factor analytic studies suggests a lack of consistency in the description of the dimensions which underlie teachers' attitudes toward integration. It is possible that the non-unitary and multi-faceted nature of attitudes themselves can account for this inconsistency. The complex nature of attitudes may make it impossible to tap all of the dimensions that compose the attitude. In addition, atitudes "... appear to be greatly influenced by specific situational factors that vary across time and place (Baker and Gottlieb, 1980:19)", therefore, the constant state of flux of educational systems themselves may account for variations in attitude dimensions.

Chapter 3

RESEARCH METHOD

3.1 Sample

The population for this study consisted of over 1300 Anglophone teachers in the Province of New Brunswick, currently teaching in an integrated setting. This group of teachers were chosen because they have the primary responsibility for educating both exceptional and non-exceptional children together and are directly affected by the implementation of Bill 85.

The New Brunswick Teachers' Association was instrumental in providing the author with a complete list of names and addresses of the over 1300 teachers identified as the population for this study. From this list, 200 names were randomly selected to form the sample for this study. In early April of 1989 a covering letter, letter of endorsement by then NBTA president Malcolm MacLeod, and questionnaire were distributed, by mail, to each of the 200 sample teachers. By late May of 1989 completed questionnaires had been returned by 136 of the 200 respondents for a 68 percent return rate.

3.2 Data-Gathering Instrument

A two-part data-gathering instrument was used in this study. Part A - Demographic Information - was developed by the author and requested that respondents provide the following information: age, gender, years of teaching experience, certificate level, grade level taught, number of courses in special education at both the undergraduate and graduate level, and the number of days of in-service dealing with exceptional children at the provincial, district, and school level. Part B - Attitude Survey - consisted of a 25-item scale of summated ratings developed by Margret Winzer and her associates. For each statement, respondents check one of five alternatives (strongly agree, agree, undecided, disagree, or strongly disagree) depending on which alternative best describes their attitude to that particular statement. Reliability of the 25-item scale has been established and reported elsewhere (Winzer and Rose, 1986; Winzer, 1987). A copy of the questionnaire is included in Appendix 1.

3.3 Statistical Treatment

In order to interpret the data, statistical procedures contained in SPSSx (Statistical Package for the Social Sciences - Release 2.1) were used for all analysis. Factor analysis was used to identify the underlying dimensions of teachers' attitudes toward integration. Multiple regression analysis was used to study the relationship between the collected demographic variables and teachers' attitudes toward integration. Multiple regression analysis was carried out on the full scale as well as on the four sub-scales identified by factor analysis.

Chapter 4

ANALYSIS OF RESULTS

4.1 Teacher Demographics

Table 1 displays the summary statistics for the demographic information collected in Part A of the questionnaire. Several respondents were unable to provide the number of special education courses taken at the undergraduate and graduate levels or the number of days of in-service training, specific to exceptional children, taken at the provincial, district, and school levels. It was decided that only variables with ten percent or less of the values missing would be included in subsequent analysis (Cohen and Cohen, 1975). Using this criterion, in-service at the provincial and school levels were excluded from all subsequent analysis for each variable had more than the allowable number of missing cases.

For the gender (SEX) and grade level (DIV1, DIV2, DIV3, and DIV4) variables, means and standard deviations represent the percentage of the sample belonging to that particular variable.

Table 1

Teacher Demographic Information

Variable	Means	S.D.	Min	Max	Valid N	Missing Values
AGE	41.37	8.15	24	63	134	2
SEX	.36	.48	0	1	135	1
YREXP	17.22	7.74	2	32	136	0
CERTL	4.60	1.00	1	6	136	0
DIV1	.18	.39	0	1	136	0
DIV2	.34	.47	0	1	136	0
DIV3	.38	.49	0	1	136	0
DIV4	.10	.31	0	1	136	0
PRESU	.85	2.14	0	12	128	8
PRESG	.49	1.44	0	8	125	11
INSP	2.88	5.49	0	30	104	32
INSD	3.16	5.72	0	50	123	13
INSS	1.66	2.58	0	15	110	26

AGE - Teacher age in years
SEX - 1 'male' 0 'female'
YREXP - Teaching experience in years
CERTL - Highest certificate level
DIV1 - Lower elementary grades 1-3
DIV2 - Upper elementary grades 4-6
DIV3 - Junior high grades 7-9
DIV4 - Senior high grades 10-12
PRESU - Undergraduate special education courses
PRESG - Graduate special education courses
INSP - In-service provincial level
INSD - In-service district level
INSS - In-service school level

4.2 Reliability of the Scale

The reliability of the 25-item scale was calculated since the scale demonstrated adequate reliability in two previous studies (Winzer and Rose, 1986; and Winzer, 1987). Of the 136 questionnaires comprising the sample, listwise deletion of cases with missing values gave a sample of 117 questionnaires from which the reliability of the scale was calculated. Cronbach's alpha for the scale yielded .892 and standardized item alpha yielded .889.

4.3 Item Analysis of the Scale

The scale used for this study consisted of 25 attitudinal statements in a five point Likert-style format. For scoring purposes, values of one to five were assigned to the categories strongly disagree to strongly agree respectively so that a higher score represented a more positive attitude toward integration. Fourteen statements (1, 4, 6, 8, 9, 12, 13, 16, 18, 19, 20, 23, 24, and 25) were positively worded whereas eleven statements (2, 3, 5, 7, 10, 11, 14, 15, 17, 21, and 22) were negatively worded and required recoding for all analysis.

Respondents' average score on the scale was calculated and is given in Table 2. The minimum possible average scale score was one, the maximum possible average scale score was five and the mid-point scale score was three. Respondents' average scale scores ranged from 2.12 to 4.48 with a mean average scale score of 3.31 and a standard deviation of .51. For this continuous data, the median average scale score was 3.27. Of the 136 respondents, 92 or 67.6 percent had average scale scores above the mid-point of three, the point of neutrality. Results of this analysis clearly indicate that Anglophone New Brunswick regular classroom teachers' attitudes toward integration lean in a positive direction.

Table 3 shows the item-total statistics for the 25-item scale and demonstrates, for the most part, that the items in the scale were quite cohesive. Most items correlated well with the scale; however, three statements had low correlations with the scale. Item 5 "Teachers who have exceptional students in the regular classroom should receive extra financial remuneration" produced a corrected item-total correlation of .11 and an alpha if item deleted of .898 compared to Cronbach's alpha for the full scale of .892. Item 23 "Teachers need extra training if they are to teach exceptional students" produced a corrected item-total correlation of -.06 and an alpha if item deleted of .897. Item 25 "If mainstreaming is to be successful, there must be significant commitment from resource staff and ancillary personnel" produced a corrected item-total correlation of .16 and an alpha if item deleted of .893. The low correlations produced by these three items indicated that they are not measuring the same universe of content as the other items in the scale.

Table 2

Frequency of Respondents Average Scale Score

Value	Frequency	Value	Frequency
2.12	1	3.36	2
2.20	2	3.39	1
2.32	1	3.40	1
2.44	1	3.44	3
2.48	1	3.46	1
2.52	1	3.48	1
2.55	1	3.52	7
2.56	2	3.54	1
2.60	3	3.56	2
2.64	2	3.58	1
2.68	3	3.60	5
2.70	1	3.63	1
2.72	2	3.64	1
2.76	1	3.68	3
2.80	2	3.72	3
2.84	3	3.76	4
2.88	4	3.80	2
2.92	2	3.84	4
2.96	3	3.88	2
3.00	8	3.92	4
3.04	7	4.08	4
3.08	2	4.12	1
3.13	3	4.13	1
3.20	2	4.16	5
3.21	1	4.20	1
3.22	2	4.40	1
3.24	1	4.48	1
3.28	7	TOTAL	136
3.32	3		
3.33	1		

Variable	Mean	S.D.	Min	Max	Valid N
VAVE	3.31	.51	2.12	4.48	136

VAVE - Average Scale Score over all Respondents

Table 3

Item-Total Statistics for the 25-Item Scale

Item	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
V1	79.2735	153.3211	.6286	.8839
V2	79.2222	159.1571	.4122	.8892
V3	80.7778	157.2433	.5102	.8869
V4	79.1111	156.2031	.5035	.8870
V5	79.3932	165.9648	.1096	.8977
V6	79.2906	152.6390	.6048	.8843
V7	80.8462	159.4761	.4214	.8890
V8	79.5214	157.1138	.4473	.8885
V9	79.5983	147.4321	.7645	.8796
V10	78.6410	164.2321	.2772	.8917
V11	80.7778	159.5364	.4129	.8892
V12	78.8974	155.8859	.6189	.8847
V13	79.0085	153.8879	.6768	.8831
V14	79.0855	155.3030	.6207	.8845
V15	80.4274	157.8158	.4261	.8890
V16	79.2479	154.9467	.5937	.8849
V17	79.4786	156.2345	.4777	.8877
V18	78.9316	156.8574	.5422	.8862
V19	79.0085	154.2844	.7145	.8827
V20	78.8120	158.2747	.4906	.8874
V21	79.6581	164.0373	.2289	.8933
V22	79.1111	156.8582	.4650	.8880
V23	78.1795	171.1141	-.0553	.8971
V24	79.3675	152.9758	.6046	.8843
V25	77.9231	167.3475	.1630	.8933

Cronbach's alpha .8919 Standardized item alpha .8886

4.4 Factor Analysis of the Scale

Factor analytic procedures were used to determine the underlying dimensions of Anglophone New Brunswick regular classroom teachers' attitudes toward integration. Factor analysis of the data involved two steps. First, factors were extracted according to the criterion of maximum likelihood which produces factor estimates that are most likely to reproduce the observed correlation matrix (Kim and Mueller, 1978). Second, a varimax rotation of the extracted factors was conducted to facilitate meaningful interpretation of the factors.

Extraction of factors, according to the criterion of maximum likelihood, yielded a six factor solution accounting for 49.6 percent of the total variance. Table 4 contains the final statistics obtained from the maximum likelihood extraction of factors.

Table 4

Final Statistics for the Six Factor Solution Extracted Via the Maximum Likelihood Criterion

Factor	Eigenvalue	Percent of Variance	Cummulative Percent
1	3.64694	14.6	14.6
2	1.11611	4.5	19.1
3	4.33109	17.3	36.4
4	1.24253	5.0	41.3
5	.75532	3.0	44.4
6	.64150	2.6	46.9

The six factor solution was judged to be an adequate representation of the data based on two criteria. To begin with, the chi-square statistic was calculated to be 164.00 for 165 degrees of freedom at the .51 significance level, indicating that the correlation matrix reproduced from the six factor solution was not significantly different from the observed correlation matrix. Furthermore, examination of the residuals (differences between observed variable correlations and reproduced variable correlations) revealed that the six factor solution produced only 17 percent of the residuals with values greater than .05.

For the six factor solution, the decision as to the number of factors to be retained for interpretation was based on criteria described in Kim and Mueller (1978). The first criterion was to choose factors which have eigenvalues greater than one (Kaiser, 1974). Analysis of the final statistics for the six factor solution (see Table 4) showed that four factors had eigenvalues greater than one. The second criterion involved analyzing the eigenvalue (scree) plot to determine the point of diminishing returns - where eigenvalues begin to level off forming a straight line with an almost horizontal slope (Cattell, 1965). This point marks the end of the major factors and the beginning of the factorial litter or scree. The eigenvalue plot has been included in Appendix 2. Analysis of the scree plot showed that the first major levelling off occured after factor four. Based on these two criteria, four factors were retained for interpretation.

Interpretation of the factors was based on varimax rotation since it produces orthagonal factors which are linearly independent of eachother. Table 5 gives the rotated factor matrix along with the eigenvalues and percent of total variance accounted for by each factor. Analysis of the rotated factor matrix showed that some items had loadings greater than .30 on more than one factor. To facilitate interpretation, the author decided to place these items exclusively with the factor in which they had the highest loading thereby creating factors which contained independent sets of questionnaire items. In addition, only items with factor loadings greater than .35 were considered for interpretation (Tabachnick and Fidell, 1983).

Items that loaded on the first factor dealt with the effects of integration on the social development of regular and exceptional children. Individual items addressed such integration issues as promoting the exceptional child's independence, the fostering of mixed group interaction, the understanding and acceptance of differences, the acceptance of exceptional children by regular children, the increased chance for exceptional children to readily fit into their communities, the need for schools to represent a microcosm of society, and the benefits to a school's image as a result of integration.

Table 5

Factor Matrix Produced by Varimax Rotation (Loadings Greater than .30)

Item	Factor 1	Factor 2	Factor 3	Factor 4
V19	.72165*			.34667
V14	.71644*			
V1	.69773*			
V12	.66726*			.30981
V16	.64000*			
V24	.56132*			
V9	.54607*	.30470	.37207	.31197
V4	.53601*			
V18	.48646*	.32905		
V17	.45159*			
V6	.44704*	.41866		
V8	.37476*	.35652		
V13	.34034	.75941**		
V20		.61828**		
V21		.44138**		
V11			.73105@	
V7			.62443@	
V3			.47928@	
V22				.52832@@
V23				-.44720@@
V15				.36907@@
V5				.36495@@
V2				.35819@@
Eigenvalue	4.63	2.05	1.71	1.58
Percent of Total Variance	18.5	8.2	6.8	6.3 = 39.8

* Items interpreted for Factor 1
** Items interpreted for factor 2
@ Items interpreted for factor 3
@@ Items interpreted for factor 4

Items that loaded on the second factor dealt with the willingness of teachers to teach exceptional children. Individual items discussed the willingness of teachers to accept exceptional children in their classroom as well as their willingness to take extra training to better prepare themselves to teach in an integrated setting.

Items that loaded on the third factor dealt with the effects of integration on teacher workload. Individual items called attention to the lack of time available to effectively teach both regular and exceptional children simultaneously, and the increased teacher workload as a result of integration.

Items that loaded on the forth factor dealt with some of the negative aspects of integration. Individual items discussed such negative aspects as the potential harm to regular students, regular students uneasiness around exceptional students, extra financial remuneration for teachers with exceptional students, and the concept of dumping exceptional children into teachers' classrooms.

Based on this interpretation of factor items, factor 1, accounting for 18.5 percent of the total variance, was labelled "Effects of integration on the social development of all students." Factor 2, acounting for 8.2 percent of the total variance, was labelled "Willingness of teachers to teach exceptional children." Factor 3, accounting for 6.8 percent of the total variance, was labelled "Effects of integration on teacher workload." Factor 4, accounting for 6.3 percent of the total variance, was labelled "Negative effects of integration." Items 10 and 25, both loaded on factor 1, with values of .21 and .27 respectively, however these values were not large enough to include the items in the interpretation.

4.5 Multiple Regression Analysis

Multiple regression analysis was used to determine the relationship between selected demographic variables and teachers' attitudes toward integration. Specifically, multiple regression analysis was conducted on the full scale as well as on each of the four sub-scales identified by factor analysis. For each analysis, the demographic variables were chosen as the independent variables and the average scale score for all respondents (VAVE) was chosen as the dependent variable.

Of the thirteen demographic variables for which information was collected on the questionnaire, three variables were excluded from the multiple regression analysis. Because of the linear relationship between the four variables categorizing grade level (DIV1, DIV2, DIV3, and DIV4), the decision was made to remove DIV1 from the analysis leaving grade levels 4-12 divided evenly among three divisions. In addition, the variables in-service provincial level (INSP) and in-service school level (INSS) were omited because both variables were missing in more than 10 percent of the cases (see Table 1).

For each of the five analyses, demographic variables were entered into the regression equation, using forced entry, according to their order of determination. For example, the variables age and sex, being determined at the time of birth, were entered first into the regression equation. These were followed, in order, by certificate level (CERTL), pre-service undergraduate level (PRESU), pre-service graduate level (PRESG), in-service district level (INSD), years of teaching experience (YREXP), upper elementary (DIV2), junior high (DIV3), and senior high (DIV4).

Tables 6, 7, 8, 9, and 10 provide the final statistics for the regression analyses using the full scale and subscales 1 to 4 as dependent variables. Resulting R Squares for each analysis, shows that only 13.9, 11.2, 14.9, 9.1, and 11.2 percent of the variance of the respective dependent variables (VAVE, VAVE1, VAVE2, VAVE3, and VAVE4) can be explained by the 10 demographic variables entered into the equation. Analysis of the significance levels for the "t" test for the full scale and subscales 1, 3, and 4 showed that the 10 demographic variables did not significantly add to the prediction of the dependent variables (VAVE, VAVE1, VAVE3, and VAVE4) at the .05 level.

Table 6

Final Statistics for Regression Analysis with Full Scale (VAVE) as Dependent Variable

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	10	4.06302	.40530
Residual	102	25.14117	.24648

F = 1.64840 Signif F = .1035

Multiple R	.37299
R Square	.13912
Adjusted R Square	.05473
Standard Error	.49647

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
AGE	-.010608	.011608	-.169276	-.914	.3630
SEX	.080951	.114915	.076513	.704	.4828
CERTL	.029742	.055354	.058193	.537	.5922
PRESU	.024804	.028131	.103822	.882	.3800
PRESG	.065362	.038625	.184359	1.692	.0937
INSD	.012199	.008708	.136604	1.401	.1642
YREXP	.001685	.012339	.025538	.137	.8916
DIV2	-.082850	.147451	-.077045	-.562	.5754
DIV3	-.179787	.149696	-.171081	-1.201	.2325
DIV4	-.027846	.185224	-.016632	-.150	.8808
Constant	3.556904	.436745		8.144	.0000

Table 7

Final Statistics for Regression Analysis with Subscale 1 (VAVE1) as Dependent Variable

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	10	5.90147	.59015
Residual	102	46.81913	.45901

F = 1.28569 Signif F = .2484

Multiple R	.33457
R Square	.11194
Adjusted R Square	.02487
Standard Error	.67750

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
AGE	-.014262	.015841	-.169383	-.900	.3701
SEX	.202115	.156818	.142183	1.289	.2004
CERTL	-.036902	.075538	-.053737	-.489	.6262
PRESU	.014016	.038388	.043663	.365	.7158
PRESG	.092665	.052710	.194529	1.758	.0817
INSD	.017923	.011883	.149373	1.508	.1346
YREXP	9.95898E-04	.016839	.011234	.059	.9530
DIV2	-.100083	.201218	-.069269	-.497	.6200
DIV3	-.231658	.204282	-.164068	-1.134	.2594
DIV4	-.077269	.252764	-.034351	-.306	.7605
Constant	4.104601	.596001		6.887	.0000

Table 8

Final Statistics for Regression Analysis with Subscale 2 (VAVE2) as Dependent Variable

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	10	9.85128	.98513
Residual	102	56.32863	.55224

F = 1.78387 Signif F = .0728

Multiple R	.38582
R Square	.14886
Adjusted R Square	.06541
Standard Error	.74313

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
AGE	-.022571	.017376	-.239268	-1.299	.1969
SEX	-.104259	.172008	-.065462	-.606	.5458
CERTL	.231653	.082855	.301088	2.796	.0062
PRESU	.005022	.042107	.013965	.119	.9053
PRESG	.068379	.057815	.128120	1.183	.2397
INSD	.018777	.013034	.139671	1.441	.1528
YREXP	.015449	.018470	.155539	.836	.4049
DIV2	-.197540	.220709	-.122029	-.895	.3729
DIV3	-.286798	.224069	-.181293	-1.280	.2035
DIV4	-.100050	.277248	-.039698	-.361	.7189
Constant	3.235880	.653732		4.950	.0000

Table 9

Final Statistics for Regression Analysis with Subscale 3 (VAVE3) as Dependent Variable

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	10	5.75147	.57515
Residual	102	57.66843	.56538

F = 1.01728 Signif F = .4343

Multiple R	.30115
R Square	.09069
Adjusted R Square	.00154
Standard Error	.75192

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
AGE	.003919	.017581	.042443	.223	.8240
SEX	.049253	.174042	.031590	.283	.7778
CERTL	.022781	.083835	.030246	.272	.7864
PRESU	.073217	.042605	.207964	1.719	.0887
PRESG	.021104	.058499	.040394	.361	.7190
INSD	.015234	.013188	.115760	1.155	.2507
YREXP	-.006370	.018688	-.065515	-.341	.7339
DIV2	.007289	.223318	.004600	.033	.9740
DIV3	.083402	.226718	.053855	.368	.7137
DIV4	.215484	.280526	.087341	.768	.4442
Constant	1.480340	.661461		2.244	.0270

Table 10

Final Statistics for Regression Analysis with Subscale 4 (VAVE4) as Dependent Variable

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	10	3.90188	.39019
Residual	102	31.01717	.30409

F = 1.28313 Signif F = .2499

Multiple R	.33428
R Square	.11174
Adjusted R Square	.02466
Standard Error	.55144

Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
AGE	-.001558	.012894	-.022731	-.121	.9041
SEX	-.114779	.127640	-.099213	-.899	.3706
CERTL	.073533	.061483	.131574	1.196	.2345
PRESU	.036012	.031246	.137849	1.153	.2518
PRESG	.054861	.042902	.141511	1.279	.2039
INSD	-.005938	.009672	-.060812	-.614	.5406
YREXP	-.003007	.013706	-.041671	-.219	.8268
DIV2	.045154	.163778	.038401	.276	.7833
DIV3	-.077173	.166272	-.067158	-.464	.6435
DIV4	.056194	.205733	.030696	.273	.7853
Constant	3.164899	.485106		6.524	.0000

However, for subscale 2 "Willingness to teach exceptional children" certificate level (CERTL) had a "t" value of 2.80 at the .006 significance level indicating that it did significantly add to the prediction of the dependent variable (VAVE2) at the .05 level.

4.6 Qualitative Analysis of Teacher Comments

Fifty-three (39 percent) of the 136 returned questionnaires contained written comments which were organized into one of five categories. The five categories included comments (1) dealing with the broad definition of exceptionality and the question of total integration for all exceptional children; (2) the question of class size and support services; (3) the time necessary to work with both regular and exceptional students; (4) the question of teacher and peer acceptance of exceptional students; and (5) the lack of training to deal with exceptional students in the regular classroom.

In the first category, comments seem to indicate that teachers are concerned over what constitutes exceptionality. Teachers commented that their exposure to varying degrees and types of exceptionalities made responding to the statements difficult; arguing that many statements could be answered differently depending on the type of exceptionality they had in mind. Teachers also commented that the successful integration of the exceptional child depends, to a large extent, on the degree of exceptionality. Strong feelings were expressed that integration, while a sound educational alternative for some exceptional children, is not a practical alternative for all exceptional children.

In the second category of comments, teachers were very concerned over the lack of adequate class size reductions and levels of support services; two elements necessary for successful integration. Many teachers commented that class size reductions are necessary to allow them to deal effectively with all their students and that integration will only be truly successful if adequate support services are in place. As one teacher lamented:

> The key to mainstreaming is not integration itself, but having the proper support systems available to the teacher who has exceptional children in the class. Where it is obvious that an exceptional child will require more of the teacher's time, the class size must be adjusted so other students will not lose the benefit of regular instruction, and teachers' aides and support must be made to allow regular teaching to continue. This is the support that is not at present available.

Finally, one teacher questioned the use of the regular classroom as a "socialization" step for some students and as an "academic institution" for others. She advised that "...We must have a common goal" when it comes to our childrens' education.

The third class of comments dealt with the lack of time to teach all students. Many teachers commented that, at present, they do not have enough time to deal with all their regular students and the addition of exceptional children into their classrooms has taken away even more teacher time from regular students. One teacher commented that, although integration is beneficial from a social and moral point of view, it is not beneficial from an academic point of view. The teacher went on to say that the exceptional child demands extra planning and one-on-one instruction which is taken away from the regular students in the class. Anotner teacher simply stated that "...Time, a lack of it, is the greatest deterrent to successfully working these children into the classroom routine."

In the forth category, comments appear to question whether or not integration fosters social acceptance of exceptional children. Teacher comments suggest that although regular children may become accustomed to the presence of exceptional children in their classrooms, they rarely accept them as peers. One teacher commented that the real losers in integration are exceptional children for they often sit in the classroom ignored by students as well as teachers. Another teacher expressed concern over the socialization issue by relating a past experience she had with an exceptional child in her classroom.

> A few years ago, I had a student who had seizures during class. The class was terrific when this happened. Did they socialize with her in a normal way at noon or after school? No and she knew it.

These comments certainly draw into question the social benefits of integration for the exceptional child.

The last class of comments addressed the lack of training teachers have in dealing with exceptional children. One teacher commented on the regular classroom teachers' desire to work with exceptional children, and felt that, in many cases, ordinary classroom teachers should not be teaching exceptional children. She went on to say that she had never had any personal interest in working with exceptional children and if she had she would have trained for it. She concluded by saying that years ago teachers had to have special education training to work with slow learners whereas today generalist teachers are being told that they are trained to teach at any level.

Chapter 5

Summary, Discussion and Conclusions

5.1 Summary

With the passage of Bill 85, all exceptional children in the Province of New Brunswick are guaranteed an education appropriate to their individual needs. Since this education takes place, for the most part, in the regular classroom setting, it was the intention of this study to determine the underlying dimensions of regular classroom teachers' attitudes toward integration and furthermore, to identify the relationship between teacher demographic variables and regular classroom teachers' attitudes toward integration.

The data collected from the 200 sample teachers participating in the study was subject to factor analysis to determine the underlying dimensions of teachers' attitudes toward integration and to multiple regression analysis to determine the relationship between teacher demographic variables and teachers' attitudes toward integration.

5.2 Discussion of the Results

Reliability of the Scale

For the New Brunswick sample the 25-item questionnaire produced excellent reliability indicating that the scale was consistent in its measurement of teachers' attitudes toward integration. Reliability analysis for the full scale produced a Cronbach's alpha of .892 and a standard item alpha of .889. The reliability of the 25-item questionnaire for the New Brunswick sample was superior to that reported by Winzer and Rose (1986) - Cronbach's alpha for the composite scale of .76 - and Winzer (1987) - Cronbach's alpha for the total scale of .85. This finding suggests that New Brunswick teachers are more homogeneous in their attitudes toward integration than the sample teachers in the Winzer and Rose (1986) and Winzer (1987) studies.

Item Analysis of the Scale

Analysis of the corrected item-total correlations for the 25-item scale (see Table 5) showed that three items did not correlate well with the total scale and that their removal would improve the overall reliability of the scale. Removal of items 5, 23, and 25 with corrected item-total correlations of .11, -.06, and .16 respectively, followed by reliability analysis, yielded a Cronbach's alpha of .905 compared to a Cronbach's alpha of .892. This modification to the questionnaire agreed, in part, with the modifications outlined in the computer analysis summarized in Winzer and Chow (1988b). In addition to deleting items 5, 23, and 25, Winzer and Chow (1988b) also deleted items 2 and 15, with corrected item-total correlations of .12 and -.19 respectively, producing their final 20-item scale. Yet, in this study, items 2 and 15 were both found to correlate well with the total scale, producing corrected item-total correlations of .41 and .43 respectively.

Table 4 showed that respondent's average scale score for the full scale was 3.31 and that 67.6 percent of the respondents have average scale scores which were greater than three, the point of neutrality. These results clearly demonstrate that Anglophone New Brunswick regular classroom teachers' attitudes toward integration lean in a positive direction. This finding was in agreement with Ogletree and Atkinson (1982), Ringlaben and Price (1981), Winzer (1984a,b), Winzer and Rose (1986), and Winzer and Chow (1988a,c) who all found that teachers in their respective samples had positive attitudes toward the concept of integration.

Nevertheless, it is not possible to conclude from this finding that New Brunswick teachers support integration wholeheartedly. The mere fact that the average scale score was only slightly over the neutral point indicates that teachers harbour some strong reservations about integration. At the time the data for this study were being collected, teachers had withdrawn all voluntary services to back their contract demands. With government funding for integration being one of the major issues in the negotiations, the New Brunswick Teachers' Federation focused much of its attention on the negative aspects of integration in order to support their demands for increased government funding for integration. This seemingly pessimistic view of integration, held by the Federation, may have smothered some of the enthusiasm teachers held for the concept.

Factor Analysis of the Scale

Factor analysis of the 25-item scale produced four factors with eigenvalues greater than one (see Table 6). These factors, accounting for 41.3 percent of the total variance, were subject to varimax rotation and interpreted to determine the underlying dimensions of teachers' attitudes toward integration. Factor 1 "Effects of integration on the social development of all students" accounted for 18.5 percent of the total variance, factor 2 "Willingness of teachers to teach exceptional children" accounted for 8.2 percent of the total variance, factor 3 "Effects of integration on teacher workload" accounted for 6.8 percent of the total variance, and factor 4 "Negative effects of integration" accounted for 6.3 percent of the total variance. For the New Brunswick sample the results of the factor analysis of the 25-item scale were different from the results reported by Winzer and Rose (1986), and Winzer (1987). In both studies, factor analysis of the 25-item scale produced attitudes in only two dimensions: (A) Effects of mainstreaming on exceptional children and their non-exceptional peers; and (B) Effects of mainstreaming on the classroom teacher and the school. The amount of total variance accounted for by the two dimensions was not reported in either study.

Respondents average scale scores, for three of the four subscales, identified by factor analysis, give further credence to the fact that Anglophone New Brunswick regular classroom teachers are slightly positive in their attitudes toward integration. Factor 1, containing positively worded statements (except 14 and 17 which were recoded) about the benefits of integration on both regular and exceptional students social development, had an average score of 3.42. This indicates that respondents agreed that integration does benefit the social development of both regular and exceptional students. Factor 2, containing positively worded statements (except 21 which was recoded) pertaining to teachers' willingness to teach or train to teach exceptional children, had an average score of 3.51. This indicated that respondents were willing to teach or train to teach exceptional children in an integrated setting. Factor 4, containing negatively worded items requiring recoding (except 23) which dealt with implied negative aspects of integration, had an average score of 3.38. This indicated that teachers disagreed with the negative aspects of integration and therefore demonstrated a positive leaning in their attitudes toward integration.

Apart from the other three subscales, Factor 3, containing negatively worded statements requiring recoding which represent additional demands on teacher workload and time, had an average score of 1.84. This indicates that teachers were in agreement with these statements on increased workload and time demand and therefore represented a major area of concern for the teachers in the sample. On a side note, the question of increased workload and reduced time for individual instruction was one negative aspect of integration cited by the Federation in its contract negotiations with government. This major area of dissension may have stifled teachers positive attitudes toward integration.

The most prominent factor, accounting for 18.5 percent of the total variance was factor 1 which dealt with the effects of integration on the social development of both regular and exceptional students. The magnitude of the variance for this factor indicates that, for New Brunswick teachers, the social welfare of their students, both regular and exceptional, may be most important in determining the success of integration programs. However, this result must be taken with caution since over 60 percent of the total variance was not accounted for by the four factors, clearly suggesting that there are other dimensions that have not been tapped in this study.

Multiple Regression Analysis

For the full 25 item scale, with VAVE - average scale score for all respondents - as the dependent variable, the final regression statistics, given in Table 6, clearly demonstrate that none of the 10 demographic variables added significantly to the prediction of attitudes toward integration at the .05 level.

The observation that teacher age had no significant relationship to teachers' attitudes toward integration was in agreement with the results reported by over half of the studies cited in this report. However, the results were contradictory to those of Harasymiw and Horne (1975) and Stainback et al. (1984) who found that younger teachers held more favorable attitudes toward integration and Hughes et al. (1973) and Winzer (1987) who found older teachers to be more favourable toward integration. The finding that age and attitudes toward integration are not significantly related supports the conclusion drawn by Hannah and Pliner (1983) who commented that age, by itself, is not related to differences in attitudes toward integration.

The finding that gender was not significantly related to teachers' attitudes toward integration concurred with the results obtained by over half of the studies cited in this report. However, almost an equal number of studies cited found that female teachers held more positive attitudes toward integration than did male teachers, a finding that was not supported by this study.

In this study teaching experience was also found to have no significant relationship to teachers' attitudes toward integration. This finding parallels the results reported by the majority of studies researched for this report. Notwithstanding the findings obtained in this study, Bond and Dietrich (1982), Mandell and Strain (1978), and Winzer and Chow (1988a) found an inverse correlation between the number of years of teaching experience and teachers' attitudes toward integration citing younger teachers as more favourable proponents of integration than their older colleagues.

The observation that certificate level is not significantly related to teachers' attitudes toward integration was overwhelmingly supported by studies on certificate level and attitudes cited in this report. All seven studies cited found no significant differences in teachers' attitudes toward integration based on certification level.

The finding that grade level taught was not significantly related to teachers' attitudes toward integration was in agreement with half of the studies cited. However, the finding obtained in this study was inconsistent with a series of studies, including two Canadian studies by Winzer and Rose (1986) and Winzer and Chow (1988a), that found positive attitudes toward integration to decrease as grade level increased.

Results of the majority of studies cited for this report found that the amount of pre-service education in special education was significantly related to teachers' attitudes toward integration. In contradiction, results from this study clearly demonstrated no significant relationship between the amount of pre-service education in special education and teachers' attitudes toward integration. Likewise, the finding that the amount of in-service training, specific to exceptional children, was not significantly related to teachers' attitudes was in direct contrast to the majority of the studies cited.

From these results it appears that Anglophone New Brunswick regular classroom teachers are unified in their attitudes toward integration across the demographic variables chosen for this study. In addition, it is possible to hypothesize that teachers' attitudes could be affected by other variables, such as class size , support materials, support personnel, and district policy to name a few, which were not included in this study. The final value of R Square (see Table 6) showed that the 10 demographic vaiables entered into the regression equation accounted for only 13.9 percent of the variance of the dependent variable VAVE - average scale score for all respondents - for the full scale indicating (1) that the 10 demographic variables added little to the predictability of attitudes, and (2) that many variables, perhaps some strong predictors, remain yet to be accounted for.

Multiple regression analysis was also used to determine if any significant relationships existed between the 10 demographic variables and teachers' attitudes toward integration on each of the four subscales identified by factor analysis. Tables 7, 9, and 10 clearly show that the results obtained for these analyses were identical to those obtained for the regression analysis on the full 25-item scale. In short, none of the 10 demographic variables were significantly related to teachers' attitudes toward integration on subscales 1, 3, and 4. Specifically, the final values of R Square for subscales 1, 3, and 4 were 11.2, 9.1, and 11.2 percent respectively again indicating that the 10 demographic variables together added little to the predictability of attitudes.

For subscale 2, with VAVE2 - Willingness of teachers to teach exceptional children - as the dependent variable, multiple regression analysis showed that certificate level added significantly to the prediction of teachers' attitudes toward integration producing a "t" value of 2.80 at a .006 significance level (see Table 8). Since subscale 2 dealt with items pertaining to teachers willingness to teach or retrain to teach in an integrated setting, and certificate level produced a Beta value of .30, indicating a positive correlation, it can be reasoned that teachers with higher certificate levels see the willingness to take extra training as an important component in promoting positive attitudes toward integration. However, as with the other regression analyses, the final value of R Square for subscale 2 was only 14.9 percent, again indicating that all 10 demographic variables together added little to the predictability of the dependent variable VAVE2.

Qualitative Analysis of Teacher Comments

Qualitative analysis of comments provided by almost 40 percent of respondents indicate some major areas of concern teachers have regarding the integration of exceptional students into regular classrooms. These major areas of concern could be an additional reason why the average scale score for all respondents on the 25-item scale (3.31) was only slightly over the point of neutrality.

One area of concern was the broad definition of 'exceptionality' used in the questionnaire. Many teachers found the items difficult to answer commenting that different answers could be given for different types of exceptionality. Along the same lines, teachers expressed concern over the question of total integration. Teachers were adamant that not all exceptional children could be successfully integrated and appeared to question whether or not some exceptional children were really benefiting from being educated in an integrated setting.

The second area of concern, expressed through teachers' comments, was the lack of adequate support services and class size reductions necessary to facilitate integration. This concern was reiterated by the fact that 96 percent of respondents agreed with item 25 which stated "If mainstreaming is to be successful, there must be a significant commitment from resource staff and ancillary personnel." It is clearly evident that teachers partcipating in this study overwhelmingly feel that adequate support services and reductions in class size are elements crucial to the success of integration.

The third area of concern was the apparent lack of time available to teach all students in the classroom. Teachers commented that the addition of one or more exceptional students into their classrooms took time away from regular pupils. This sentiment was supported by the responses to three questionnaire items. Eighty-five percent of the respondents agreed with item 3 "Teachers already have a heavy workload without the responsibility of exceptional students"; 85 percent agreed with item 7 "In the classroom, the exceptional child will take more than his/her share of the teacher's time"; and 87 percent agreed with item 11 "The teacher cannot give equal time to all students if there are exceptional children in the classroom."

The fourth area of concern was the question whether or not exceptional children were being accepted by their peers and teachers. From the comments it appears that regular children are willing to tolerate the presence of exceptional children in the classroom but are unwilling to socially interact with them as peers. Some teachers indicated that at the lower grade levels regular children were more willing to interact and accept their exceptional classmates as peers, possibly because differences are not so apparent at such a young age.

The fifth and final area of concern was teachers' lack of training to deal with exceptional children. From analysis of the comments it appears that some teachers feel that they do not have the training necessary to effectively deal with exceptional children in their classrooms. This concern was echoed in the responses to two items on the questionnaire. Seventy-eight percent of the teachers agreed with item 20 "As a teacher, I would be willing to take extra training so as to be better able to handle exceptional children in my classroom"; and 91 percent agreed with item 23 "Teachers need extra training if they are to teach exceptional children." From these responses it must be concluded that many teachers feel inadequately prepared to deal with exceptional children in their classrooms.

5.3 Conclusions

From this study of teachers' attitudes toward integration five major conclusions can be drawn. To begin with, Anglophone New Brunswick regular classroom teachers' attitudes toward integration lean in a positive direction. This finding is promising because teachers in the Province of New Brunswick appear committed to the process of integration and recognize the right of all children to an education appropriate to their individual needs.

Second, written comments showed that although teachers' attitudes toward integration are positive, teachers harbour some strong reservations regarding current integration practices in New Brunswick schools. These concerns, which address the issues of integration for all exceptional children, the need for class size reductions, inadequate support services, the lack of time to teach all students, and the lack of training to teach in an integrated setting, mirror some of the concerns put forth by the New Brunswick Teachers' Association in their Survey on Integration Report in 1988, and by the English and French Integration Review Committee Reports in 1989. These concerns must be addressed now if integration is to be a successful educational endeavour in the Province of New Brunswick.

Third, teachers' attitudes toward integration appear to be composed of four measurable dimensions. The effects of integration on the social development of all children, the willingness of teachers to teach exceptional children, the effects of integration on teacher workload, and the negative effects of integration appear to be the main elements which underlie New Brunswick teachers' attitudes toward integration.

Fourth, teachers were found to be very homogeneous in their attitudes toward integration across the demographic variables chosen for this study. It appears that New Brunswick teachers are not divided along such lines as age, gender, years of teaching experience, certificate level, grade(s) taught, pre-service education, and in-service training. This finding is important to the New Brunswick Teachers' Association since it demonstrates that its members are unified in their attitudes toward integration. This, in turn, allows the association to speak on integraton with one voice representing all its members.

Finally, this study found that teachers' attitudes toward integration are not significantly related to teacher demographic variables and that the demographic variables studied accounted for less than 20 percent of the variance of the dependent variable. This suggests that other variables such as class size, availability of support materials and resource personnel, and district policy on integration, may be significant predictors of teachers' attitudes toward integration.

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Appendix 1

Two Part Questionnaire on Integration

Part A: Demographic Information

Please provide the following information. Be as accurate as you can.

1. Age: ____ 2. Sex: Male ( ) Female ( )

3. Total Teaching Experience: ____ year(s)

4. Circle your highest certificate level:

1 2 3 4 5 6

5. Circle the grade level(s) that you teach:

1 2 3 4 5 6 7 8 9 10 11 12

6. Pre-Service (University courses in Special Education):

a) Number of undergraduate courses in special education taken since 1980: ____

b) Number of graduate courses in special education taken since 1980: ____

7. In-Service (ie. Conferences, Workshops, Seminars):

Since 1980, how many days of in-service have you received specific to exceptional pupils at the:

a) Provincial level ____

b) District level ____

c) School level ____

Thank-you. Please proceed with Part B.

Part B: Attitude Survey

In this section check the category which best describes your attitude to the statement. Please answer all statements.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. Mainstreaming the exceptional child will promote his/her independence.					
2. Non-handicapped students feel uncomfortable around exceptional students.					
3. Teachers already have a heavy workload without the responsibility of exceptional students.					
4. Exceptional children will find it much easier to mix with their peers after leaving school if they have been taught together in regular classrooms.					
5. Teachers who have exceptional students in the regular classroom should receive extra financial remuneration.					
6. It is hypocritical to talk about the school representing a microcosm of society if it excludes exceptional children.					
7. In the classroom, the exceptional child will take more than his/her share of the teacher's time.					
8. The image of a particular school benefits from the presence of exceptional children.					
9. The integration of exceptional students into regular classes is beneficial to regular pupils.					
10. Extra costs involved in educating exceptional children should be borne by the parents.					
11. The teacher cannot give equal time to all students if there are exceptional children in the classroom.					

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
12. Mainstreaming offers mixed group interaction which fosters understanding and acceptance of differences.					
13. As a teacher, I would be willing to have an exceptional child in my classroom.					
14. Mainstreaming is likely to have a negative effect on the emotional development of the exceptional child.					
15. Classroom teachers should make the decision as to whether or not to take an exceptional child in their classroom.					
16. Mainstreaming will give exceptional students a better chance to readily fit into their community.					
17. The exceptional child is likely to be socially isolated by regular students.					
18. With the help of experienced teachers, support services and special equipment, exceptional students can do well in the regular classroom environment.					
19. The presence of exceptional children in the regular classroom helps the regular child understand and accept them in an empathetic and realistic manner.					
20. As a teacher, I would be willing to take extra training so as to be better able to handle exceptional children in my classroom.					
21. The parents of regular children will object to the presence of exceptional children in the regular classroom.					
22. The contact which regular class students have with mainstreamed exceptional students may be harmful to the regular students.					

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
23. Teachers need extra training if they are to teach exceptional students.					
24. Regular students quickly become accustomed to having exceptional pupils in the school and naturally accept them as peers.					
25. If mainstreaming is to be successful, there must be significant commitment from resource staff and ancillary personnel.					

Thank-you for your participation. Please fold the completed questionnaire in half and mail it in the self-addressed, stamped envelope provided.

Appendix 2

Eigenvalue Plot for Six Factor Solution

F A C T O R   A N A L Y S I S